TIMES

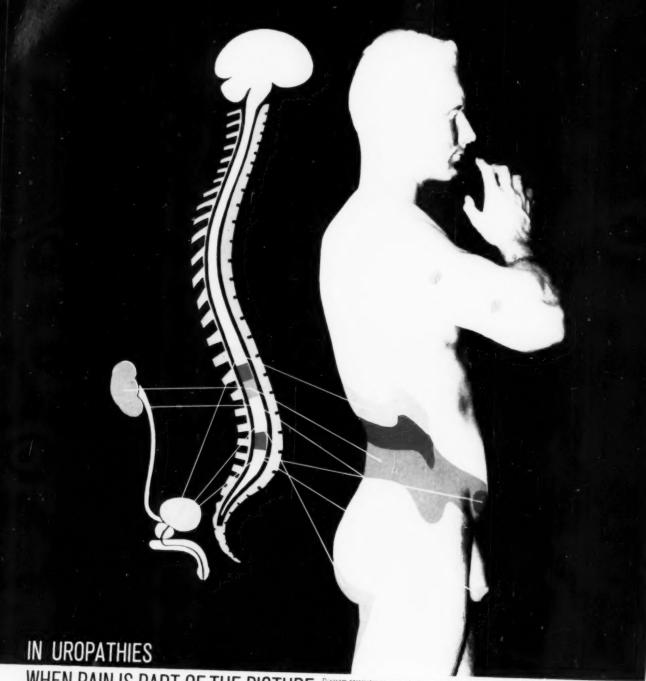
Journal for the Family Physician

June 1959

Changing Concepts in Childhood Neurology

Role of the Family Doctor in Preventing Anesthetic Deaths





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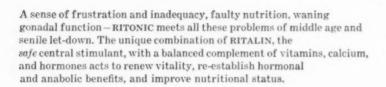
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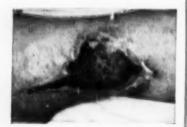
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REFERENCE: 1. Van Wijk, T.W.; Angiology 4:103, 1953. Bibliography: 1. Gillhespy, R.O.; Brit. M. J. 2:1543, 1957, 2. Gillhespy, R.O.; Angiology 7:27, 1956. 3. Winsor, T.: Angiology 4:134, 1953. 4. Reeder, J.J.: Geneesk. gids. \$1:370, 1953. 5. Kappert, A.: Schweiz. mod. Wchnschr. \$6:237, 1955.



Philadelphia 1, Pa.



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1. Coleman, S. S.: Am. J. Surg. 97:43 (Jan.) 1959. 2. Richardson, M. E.: J. Am. Osteop. A. 57:562 (May) 1958. 3. Mason, M. L.: Northwest Med. 57:1439 (Nov.) 1958.

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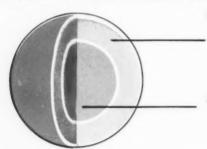
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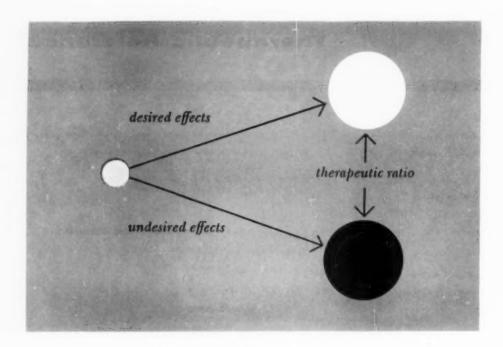
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Neustadt, D. H.: Corticosteroid Therapy in Rheumatoid Arthritis: Comparative Study of Effects of Prednisone and Prednisolone, Methylprednisolone, Triameinolone and Dexa-methasone, J.A.M.A., in press.





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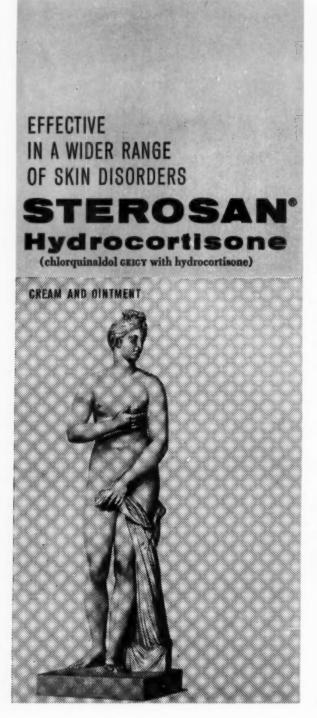
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Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Petite

After completing a routine history on a very "petite Miss," I reached casually into the cabinet for an examination gown. The linen was placed in the patient's lap, and she was told to remove her clothing and to "slip into this."

Upon returning to the examining room some ten minutes later, I was completely aghast at seeing the patient sitting on the examining table in her best birthday suit, and folded neatly across her lap was the linen that I had given her.

I inquired as to why she hadn't slipped into the linen. She immediately held up the linen, a pillow slip, and made the statement, "It is too small."

F.J.W., M.D. Seattle, Wash.

I Wish You Hadn't Asked That

As a senior medical student, I was sent to a neighboring hospital to obtain practical obstetrical experience which included home deliveries completely on one's own, without a nurse on the premises.

On the first of these unpleasant excursions, I had a patient who was a little slow, and loudly complaining. In addition, several members of the family and an officious grandmother were holding court, so to speak.

During the tedious and tense period of labor, grandmother made it her unfailing duty to see

that the patient's knees were drawn up and that pressure was made on the knees to force the patient's hips into the mattress with every contraction. Growing tired of this duty after a time, Grandmother indicated that I should make myself useful by taking over the task of knee pressure. Failing to see the efficacy of the procedure, I declined. Whereupon, with several stony-faced relatives intently listening and watching, Grandmother asked rather pointedly, "Doctor, how many babies have you delivered?"

Anonymous

Flavorite

A few years ago my husband performed a T and A on my six-year-old nephew who was visiting us. Two days after he was home from the hospital he developed a mumps infection which was very severe. His continual high temperature was very frightening to me and he simply would not swallow fluids. I began retention enemas hourly, and in between I coaxed him to drink with every known flavor of carbonated beverage, tea, water, etc. I begged him to drink and said, "If you don't, I guess I'll have to go on with the enemas." He looked up with a sweet smile and whispered, "That's all right, auntie. Just for a change, how about putting that strawberry stuff in."

Mrs. T.A.L. Lansing, Mich. Concluded on page 29a

NOW

...a new way
to relieve pain
and stiffness
in muscles
and joints

INDICATED IN:

MUSCLE STIFFNESS

LUMBOSACRAL STRAIN

SACROILIAC STRAIN

WHIPLASH INJURY

BURSITIS

SPRAINS

TENOSYNOVITIS

FIBROSITIS

FIBROMYOSITIS

LOW BACK PAIN

DISC SYNDROME

SPRAINED BACK

"TIGHT NECK"

TRAUMATIC STRAINS



Exhibits unusual analgesic properties, different from those

of any other drug Specific and superior in relief of SOMAtic pain

■ Modifies central perception of pain without abolishing natural

defense reflexes Relaxes abnormal tension of skeletal muscle



N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

■ More specific than salicylates ■ Less drastic than steroids

■ More effective than muscle relaxants

SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. Soma is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with Soma than with any previously used analgesic, sedative or relaxant drug.

Soma also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of SOMA is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on high dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets. Literature and samples on request.

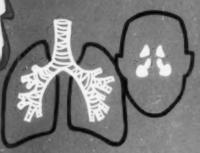


Wallace Laboratories, New Brunswick, N. J.



CHYMAR* Jqueous

liquefies viscid mucus



in asthma, bronchitis, rhinitis and sinusitis

Chymar Aqueous was used as adjunctive therapy for 60 patients suffering from asthma, bronchitis, rhinitis or sinusitis. "In the majority (48) of these cases, improvement was demonstrated by easier breathing, improved vital capacity, thinning of bronchial secretions, ability to raise sputum more freely and a reduction in the amount of expectoration." In 2 other studies, Chymar was used with good success in treating 45 cases of asthma. L. Supplied in 5 cc. multiple dose vials with 5000 Armour Units per ml. Aiso available as Chymar in Oil. 1. Parsens, D. J.: Clinical Medicine 5:1461, 1968. 2. Dias, E. S.: Revista de la Confederacion Medica Panamericans 5:402, 1868. 3. Dias, E. S.: Sinopsis Medica Interaccional 6:20 (March) 1988.

Chymar Aqueous is also preferred for systemic antiinflammatory action in obstetrics, gynecology, dermatology, surgery, accidents and eye diseases. A. ARMOUR

ARMOUR PHARMACEUTICAL COMPANY · KANKAKEE, ILLINOIS · A Leader in Biochemical Research

Light Matter

I had just purchased a bright red ring which sparkled and glowed beautifully in a bright light. My nurse and I were in the examining room, along with the first patient of the day who had been placed in position for a pelvic.

I grabbed the vaginal speculum, seated myself, positioned the instrument, and turned on the bright surgical light which hit the new ring and reflected it in all its brilliance. I looked up at my nurse and said, "My God, isn't that beautiful!" Whereupon the patient half sat up and said, "Thank you, Doctor."

> G.G.R.K., M.D. Tacoma, Wash.

Blue Monday

On a Saturday night of a holiday weekend (Monday was the holiday), I was called to the phone. A female voice inquired whether I made house calls. I said, "yes, indeed I do," and inquired what was the urgency for a house call on a Saturday evening. The female voice stated that she wanted to have an examination to determine whether or not she was pregnant. She was having none of the symptoms of toxicity or bleeding which would make it an emergency. So, in my most professional fashion I explained to her that I would be very glad to see her. make such an examination as was necessary on Tuesday and perform a rabbit test at that time. Her matter of fact reply was this: "Oh, Doctor, that will be too late. I am going to be married on Monday."

> W.M.D., M.D. Seattle, Wash.

Ah-h-h

Shortly after starting practice in this town, with a great number of Latin-American patients coming to my office, I was confronted with an eight-year-old girl who refused to open her mouth and say, "Ah." She apparently under-

stood no English, staring blankly at me when I repeatedly asked her to open her mouth. Finally, in desperation, I asked her (in English) to open her mouth and say "Ah" in Spanish. This request she promptly complied with as she uttered a golden, bell-toned Spanish "Ah-h-h," revealing two swollen tonsils.

J.H.W., M.D. Victoria, Tex.

Double Entries

There have been many interesting experiences and happenings in my twenty-five years of practice but I will never forget the following three sets of deliveries I performed during World War II:

- One time I had a Mrs. Payae and a Mrs. Kramp in labor at exactly the same time.
- Another time I had a Mrs. Foxe and a Mrs. Wolf in labor simultaneously.
- 3. Still another time, I delivered (almost within an hour) "The Smith Brothers," (twin boys) and "The King Sisters," (twin girls).

E.J.V.B., M.D. Everett, Wash.

Cookbook View

A young woman whom I had been treating for mixed vaginitis, for some time, seemed perplexed. I had prescribed vaginal suppositories and vinegar douches to clear up her discharge.

She queried, "Doctor, I want to get this straight about how many tablespoons of vinegar per quart of hot water. I was afraid I might get the solution too strong. You know I don't want to pickle it."

I bit the inside of my cheek and reassured her that 2 or 3 tablespoons of vinegar per quart would be therapeutically effective.

> A.R.N., M.D. El Paso, Tex.

helps them weather the hay fever season

BENADRYL

ANTIHISTAMINIC-ANTISPASMODIC

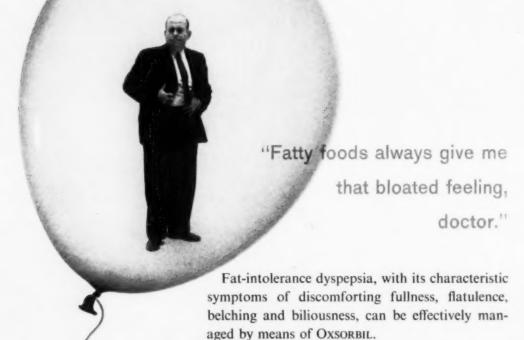
gives fast, comprehensive relief of allergic symptoms. At this time of year pollens from trees, grasses, or weeds cause distressing symptoms in allergic patients. You can help your patients to enjoy greater comfort during the hay fever season by prescribing BENADRYL. Its potent antihistaminic action rapidly relieves nasal blockage, rhinorrhea, sneezing, itching, and related allergic reactions, while its atropine-like antispasmodic action swiftly suppresses bronchial and gastrointestinal spasms. BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) is available in a variety of convenient forms including: Kapseals,* 50 mg. each; Kapseals, 50 mg., with ephedrine sulfate, 25 mg.; Capsules, 25 mg. each; Elixir, 10 mg. per 4 cc.; and Emplets,* 50 mg. each, for delayed action. For parenteral therapy, BENADRYL Hydrochloride Steri-Vials,* 10 mg. per cc.; and Ampoules, 50 mg. per cc.



PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

95051





Oxsorbil, containing the surface-active agent *Polysorbate 80* • pre-emulsifies fats in the stomach • stimulates production and flow of bile • decreases viscosity of bile and aids in flushing of the gall-bladder • maintains normal peristaltic tone.

When gastrointestinal spasm and nervous tension complicate the management of the patient Oxsorbil-PB, containing phenobarbital and belladonna, is recommended.

Supplied: Bottles of 100 capsules.

Literature available upon request

OXSORBIL

Choleretic - FAT EMULSIFIER - Cholagogue



IVES-CAMERON COMPANY Philadelphia 1, Pa.

OXSORBIL-PB

The OXSORBIL formula plus phenobarbital and belladonna

For the management of fat-intolerance dyspepsia



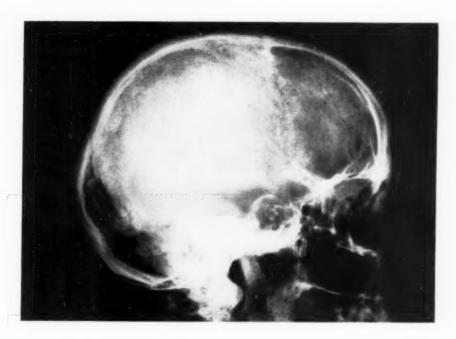
Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology, New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS YOUR DIAGNOSIS?

- 1. Pituitary tumor
- 3. Meningioma
- 2. Craniopharyngioma
- 4. Aneurysm

Answer on page 214a



HOSPITAL STAFFS ACCLAIM 'SENOKOT' IN THE TREATMENT OF CONSTIPATION

'Senokot' Tablets and Granules are routinely prescribed in more than 3000 hospitals from coast to coast and overseas. 'Senokot' is preferred, not only by hospitals, but by an ever-growing number of physicians for the safe, physiological correction of constipation. Following are typical comments, among many, from hospitals throughout the United States:

CHARLOTTE, NORTH CAROLINA

"...not one of the patients has experienced any untoward reaction nor has there been any evidence of diarrhea in the infants of post-partum mothers who were breast feeding."

"...nurses...report that they no longer have complaints of abdominal 'griping' pain which was so prevalent heretofore with the usage of harsher laxatives in postpartum patients." 1

BERWYN, ILLINOIS

"...standard item in the obstetrical service at MacNeal Memorial Hospital." ²

SCHENECTADY, NEW YORK

"Definitely it cuts down on the amount of postpartum nursing care from a point of view of giving postpartum enemas. For this, the nurses are very thankful."³

GALVESTON, TEXAS

"...very helpful in the postoperative care of our patients..."4

NORRISTOWN, PENNSYLVANIA

"...have been used mainly with patients who complained of constipation as a side effect of chlorpromazine therapy." 5

BATTLE CREEK, MICHIGAN

"...we are using Senokot more frequently than any other product in its class for mild constipation..."6

BOSTON, MASSACHUSETTS

"...certainly effective clinically ... "?

PHOENIX, ARIZONA

"...cut down the number of enemas required by approximately 60 per cent ... " $^{\aleph}$

PHILADELPHIA, PENNSYLVANIA

"Undoubtedly it does reduce the nurses' time and efforts, particularly in that few enemas are required..."9

MINNEAPOLIS, MINNESOTA

"...clinically effective...has reduced post-partum enemas at least two-thirds." 10

AKRON, OHIO

"...very effective and helpful; the nurses are particularly happy to have a product such as yours. No untoward accidents have occurred thus far on our service..."

TYLER, TEXAS

'It reduces the nurses' time, and we do recommend it for our patients." 12

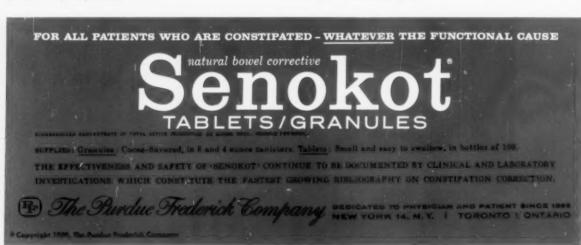
CHICAGO, ILLINOIS

"...unquestionably it has reduced the instances of enemas in our Institution." 13

COLUMBUS, OHIO

"... we are recommending it for our patients."14

CITED REFERENCES: 1. Tart, J. M., Jr.: Personal Communication, 1957. 2. Sykora, L. J.: Personal Communication, 1957. 3. Phillips, J. B.: Personal Communication, 1957. 4. McGivney, J.: Personal Communication, 1957. 5. Kremens, J. B.: Personal Communication, 1957. 6. Holsted, E.: Personal Communication, 1957. 7. Abrams, A. A.: Personal Communication, 1958. 8. Van Epps, C.: Personal Communication, 1957. 9. Gruber, F. E.: Personal Communication, 1957. 10. Bergquist, J. R.: Personal Communication, 1957. 11. Wentsler, N. E.: Personal Communication, 1957. 12. Pummer, L. R.: Personal Communication, 1957. 13. Hawkins, R.: Personal Communication, 1957. 14. Baldridge, R. W.: Personal Communication, 1957.





in skin, soft tissue and post-surgical infectionsin genito-urinary infectionsin respiratory tract infections-

due to staph or "gram negatives"

the "first choice" antibiotic \leq to use is

KANTREX

because ... (see over)

Kantrex is the "first choice" antibiotic for use in infections due to staph and "gram negatives"...

because it is:

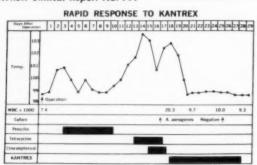
- bactericidal not merely bacteriostatic
- · rapid-acting
- effective against a wide range of organisms, including many strains resistant to other antibiotics
- · clinically safe in specified dosage

- less likely to lead to the development of resistant organisms in clinical usage
- "most likely to succeed"—in saving time, cutting the cost of illness, reducing complications and bringing about a successful therapeutic result

because it is: clinically proven

in over 1000 cases by 111 investigators, reported in 42 published papers

POST-SURGICAL INFECTION KANTREX Clinical Report No. 799



E. D., a 73-year-old male, underwent a suprapubic cystotomy and fulguration of papillary carcinoma of the bladder. His temperature began rising on the 10th postoperative day; subsequently urine and blood cultures yielded A. aerogenes. After penicillin, tetracycline and chloramphenicol failed to alter the course of the infection, KANTREX brought about a dramatically improvement.

Rutenburg, A. M., et al.: Annals N.Y. Acad. Sci. 76:348, 1958.

typical dramatic response

(even after other antibiotics failed)



Supply: Available as a ready-to-use sterile aqueous solution in two concentrations (stable at room temperature indefinitely): KANTREX Injection, 0.5 Gm. kanamycin (as sulfate) in 2 ml. volume. KANTREX Injection, 1.0 Gm. kanamycin (as sulfate) in 3 ml. volume.

KANTREX INJECTION

KANTREX Somblety Dies and comprehensive Beruture available on request

BRISTOL LABORATORIES INC., Syracuse, New York





"Doctors can't help shingles?"

Physicians who have used Protamide extensively deplore such statements as unfortunate when they appear in the lay press. They have repeatedly observed in their practice quick relief of pain, even in severe cases, shortened duration of lesions, and greatly lowered incidence of postherpetic neuralgia when Protamide was started promptly. A folio of reprints is available. These papers report on zoster in the elderly—the severely painful cases—patients with extensive lesions. Protamide users know "shingles" can be helped.



PROTAMIDE

Sherman Laboratories

Detroit 11, Michigan

Available: Boxes of 10 ampuls - prescription pharmacies.



Don't forget, Doctor-"to take some of your own medicine!"

On vacation — at the beach — on the golf course — or gardening in your own back yard, sunburn, insect bites, cuts and abrasions are all part of the summer picture.

A handy tube of Xylocaine Ointment means prompt relief of pain, itching and burning for your patients. After you've seen to your patients' comfort, remember that tube of Xylocaine Ointment for yourself.

Just write "Xylocaine Ointment" on your Rx blank or letterhead, and we will send a supply for you and your family.



Astra Pharmaceutical Products, Inc., Worcester 6, Mass., U.S.A.

XYLOCAINE OINTMENT

2.5% & 5%

SURFACE ANESTHETIC

*U.S. Pat. No. 2,441,498 Made in U.S.A.



Acute exacerbation of contact dermatitis

Before Treatment

see next page 💹 📝

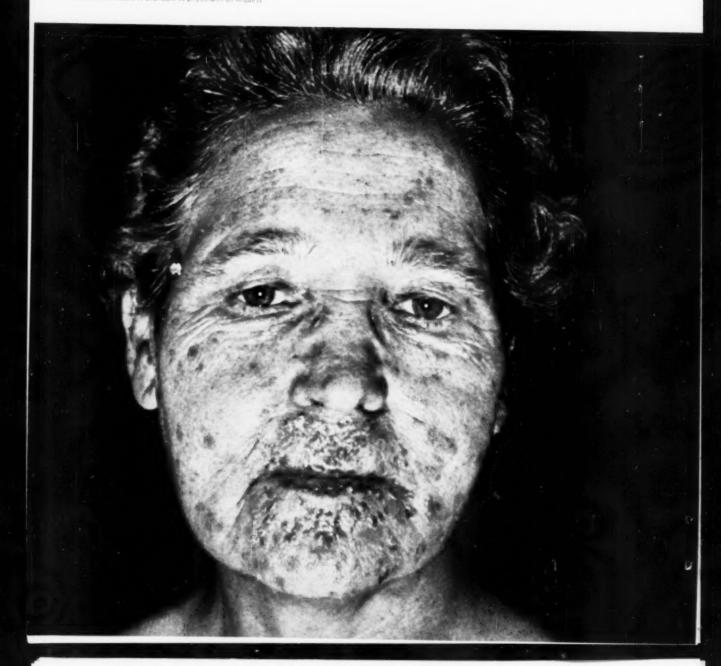




After 4 Days of treatment with

only 1 mg. q.i.d. of Decadron

Additional literature is available to physicians on request



After 7 Days of treatment with

only 1 mg. q.i.d. of Decadron



Photo 6 days following the discontinuation of therapy

Merck Sharp & Dohme DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

DECADRON is a trademark of Merck & Co., Inc.





antibiotic control under physician control

A SINGLE ANTIBIOTIC ... permitting flexible, controlled dosage as needed ... free from restrictions of fixed combinations ... for optimum tetracycline levels ... unsurpassed effectiveness covering at least 90 per cent* of antibiotic susceptible infections seen in general practice.

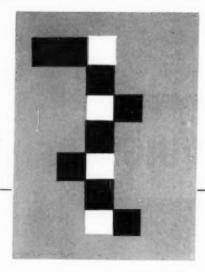
Supplied: Capsules of 250 mg. with 250 mg. citric acid and 100 mg. with 100 mg. citric acid.

Capsules Tetracycline with Citric Acid Lederle

*Based on a twelve-month National Physicians Survey.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York Coderle





Medical Teasers

A challenging crossword puzzle for the physician (Solution on page 158a)

ACROSS

- 1. Tube for passage of
- secretions
- 5. The uterus
- 10. A jogging pace
- 14. Girl's name
- 15. Limited spaces
- 16. Act as if mad
- 17. Anatomy (abbr.)
- 18. Mole or birthmark
- 19. Old 20. Spoke bombastically
- 22. Open sores
- 24. Pertaining to the mouth
- 26. To be agitated
- 27. Gutteral
- 30. Thinks logically
- 34. Hasten
- 35. Perceive
- 36. Unusual
- 37. Contagious disease in birds
- 38. Suffix used to form superlative 39. Native of (suffix) 40. Rapid Treatment Cen-
- ter (abbr.)
- 41. Centigram (abbr.)
- 44. The self
- 47. Vase 48. A fabric (pl.)
- 50. Added cream
- 52. Prejudice
- 53. Labor for breath
- 54. Erroneous hearing of sounds
- 57. Purulent infection of the finger (pl.)
- 61. Assume an attitude
- 62. Guide
- 66. Female reproductive cell
- 67. Ireland
- 68. Wear away
- 69. Artificially produced
- 70. An Abode 71. Drugged
- 72. Any bulla or skin vesicle

DOWN

I. Highly valued

- 2. Bone of the forearm
- 3. A clique
- 4. Color the skin by punctures
- 5. An order
- 6. Before 7. Tellurium, vanadium (symbols)
- 8. Dutch anatomist
- 9. Confirmed
- 10. Pathways
- II. Anger
- 12. Above 13. Spreads for drying
- 21. Epochs
- 23. A metal, symbol Pb

- 25. Strong caustic alkaline 46. Platinum wire and loop solution
- 26. From
- 27. Small calory
- 28. Prefix denoting relation to tissues
- 29. Strain, as in vomiting
- 31. A narcotic
- 32. Potassium nitrate
- 33. Disburse
- 41. 103 (Roman)
- 42. Seized
- 43. Manuscripts (abbr.)
- 44. Electrocardiogram (abbr.)
- 45. Implanted tissue

with glass handle

BY ALAN A. BROWN

32

- 49. Not present
- 51. Self-possession
- 54. Exposed
- 55. Ripped
- 56. Disease or morbid
- pro-ess (suffix) 58. Egg-shaped
- 59. Naked
- 60. Samarium, elementary body (abbr.)
- 63. International Refugee Organization (abbr.)
- 64. Cut off
- 65. Short poem

AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE

Is there a relationship between premature impotence and diabetes?

Yes. The incidence of premature impotence was studied in 198 diabetic men,¹ and found to be two to five times higher than that reported for the general population.² In many of the cases observed, impotence developed early in the history of the disease, suggesting that the possibility of diabetes mellitus be considered whenever a man complains of premature impotence.

(1) Rubin, A., and Babbott, D.: J.A.M.A. 168:498, (Oct. 4) 1958. (2) Kinsey, A. C.: Pomeroy, W. B., and Martin, C. E.: Sexual Behavior in the Human Male, Philadelphia, W. B. Saunders Company, 1948.

FOR EVEN BETTER CONTROL OF THE MODERATE AND THE SEVERE DIABETIC

uniformly reliable readings with

COLOR-CALIBRATED

CLINITEST Reagent Tablets



the STANDARDIZED urine-sugar test that provides reliable quantitative estimations throughout the critical range. results that are easier to interpret

The new CLINITEST Urine-Sugar Analysis Set contains the standard color scale that provides a complete range of readings without omissions...includes the critical $34\% \ (++)$ and $1\% \ (++)$...and an improved analysis record form.

Daily urine-sugar readings may be connected to form a clinically useful graph ...a day-to-day "urine-sugar profile" that reveals at a glance individual trends and degree of control.



"...safely, comfortably, and effectively useful in initial digitalization, redigitalization and maintenance digitalization of patients in heart failure."



Rheumatic Heart Disease

GITALIGIN

WIDEST SAFETY MARGIN—AVERAGE THERAPEUTIC DOSE ONLY $^{1}_{\odot}$ THE TOXIC DOSE. The average therapeutic dose of other digitalis preparations is $^{2}_{\odot}$ the toxic dose, 1

FASTER RATE OF ELIMINATION THAN DIGITOXIN OR DIGITALIS LEAF. Therefore, should toxicity inadvertently occur, symptoms would be of much shorter duration with GITALIGIN.

THESE SIMPLE DOSAGE EQUIVALENTS MAKE IT EASY TO SWITCH YOUR PATIENT TO GITALIGIN— 0.5 mg, of Gitaligin is approximately equivalent to 0.1 Gm, digitalis leaf, 0.5 mg, digoxin or 0.1 mg, digitoxin.

Supplied:

GITALIGN 0.5 mg. Tablets—bottles of 30 and 100, GITALIGN Injection Ampuls—2.5 mg. in 5 cc. sterile, LV, solution, GITALIGN Drops 30 cc. bottle with special calibrated dropper.



WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY

* ELMINOUSE E. P., ET AL., ANN., INC., MED., IS ALLE S. THALE S. BRAND OF RECEPOIDS EXPLINE A TEXT CONTRACT AND AREA OF RELIGIOUS

FROM MARKED IMPROVEMENT to COMPLETE CONTROL of GRAND MAL SEIZURES with

wide margin of safety

CLINICAL EVALUATION OF 486 **EPILEPTIC PATIENTS* SHOWED THAT:**

In patients who had received no previous anticonvulsant medication,

"Mysoline" therapy alone provided marked improvement to complete control of major motor attacks in the majority of patients.

In patients only partially controlled with maximum

dosages of other anticonvulsants, the addition of "Mysoline" therapy was followed by marked improvement to complete control of grand mal attacks in 39% of the patients.

In patients refractory to maximum dosages of other anticonvulsants,

"Mysoline" employed alone provided marked improvement to complete control of major motor attacks in 34% of the patients.

In 39 patients with mixed seizures,

"Mysoline" provided improvement to marked control in 49% of the patients.

The dramatic results obtained with "Mysoline" advocate its use as first choice of effective and safe therapy in the control of grand mal and psychomotor attacks. Supplied: 0.25 Gm. scored tablets, bottles of 100 and 1,000. Literature on request.

Livingston, S., and Petersen, D.: New England J. Med. 254:327 (Feb. 16) 1956.



AYERST LABORATORIES

New York 16, N. Y.

Montreal, Canada

"Mysoline" is available in the United States by arrangement with Imperial Chemical Industries, Ltd.

any gout in your family?

"Careful inquiry should be made into the family history of every patient with unexplained acute arthritis. If a family history of gout is obtained, even though it is one or two generations removed, this information is significant."

"The possibility of gout should be investigated in each patient with arthritis, irrespective of the apparent type." a

"The concentration of uric acid in the serum has been emphasized and reemphasized as a diagnostic aid. In our experience it is a most valuable one."

"All patients complaining of non-traumatic musculoskeletal discomfort should have at least one serum uric acid determination."

IF THE DIAGNOSIS IS GOUT. . .

common manifestations of gout







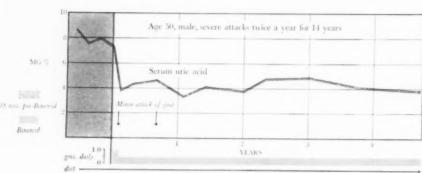


INDISPENSABLE FOR THE TREATMENT OF CHRONIC **GOUT**

Benemid

a specific for gout

"As to the use of uricosuric agents in interval treatment of symptomless gout, probenecid ['Benemid'], a benzoic acid derivative, is probably the best agent for prolonged use."2



Control of gout in therapy with 'Benemid', plus adherence to low purine and low fat diet. Two minor attacks occurred during the first year of treatment.3

- has a most pronounced uricosuric effect
- causes marked decrease in serum uric acid
- acute attacks usually become less frequent and less severe
- may cause regression in subcutaneous tophi, resorption of osseous tophi and recalcification of decalcified bony structure
- arrests or prevents bone damage, so that need for surgery may be obviated
- helps return patients to work
- negligible toxicity

Dosage between acute episodes: 0.25 Gm. twice daily for one week, followed by 1 Gm. daily in divided doses. (Many clinicians prefer to give 'Benemid' and colchicine concurrently.)

Supply: 0.5 Gm, tablets, bottles of 100 and 1000.

I. Coodley, E.: Differential diagnosis of rheumatic diseases, Am. Pract. & Dig. Treat. 9:1238. Aug. 1958. 2. Hench, P. S.: Gout and gouty arthritis, in Cecil, R. L.: A textbook of medicine, ed. 9. Phila., W. B. Saunders Co., 1955, p. 651, 656–3. Lockie, L. M.: Symposium on gout: Diagnosis, Metabolism 6:269, May 1957, J. Kuzell, W. C.: Schaffarzick, R. W.; Naugler, W. E.: Koets, P.: Mankle, E. A.; Brown, B., and Champlin, B.: Some observations on 529 gouty patients, J. Chron. Dis. 2:645, 1955. 5. Bartels, E. C.; Symposium on gout: Treatment of gout, Metabolism 6:297, May 1957.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA I, PA.



Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

This 69-year-old man was found dead in the living room of his apartment. He had severe bruises on head, less on back. On his neck was a strangulation mark apparently caused by twisting of the necktie. Ink had been poured into his mouth and a twelve-inch ruler was driven deep into his chest. At autopsy, small symmetrical hemorrhages were found under the skin of the chest. From the findings the case was reconstructed as follows: The assailant kneeled on the victim's chest and apparently tried to keep him from screaming by hitting him with a shoe found close to the body and by strangling him with his necktie. In interpreting the use of ink and ruler, the

identical source of the two objects, the desk, was considered. In the desperate attempt to silence his victim, he grabbed the first thing close to him, the inkwell, and poured it into his victim's mouth. Seeing no success he grabbed the ruler which killed the victim.

The assailant was soon apprehended. He confessed that he wanted to steal the old man's keys so that he could rob the store which the victim managed. He confirmed the details of his attack as they had been reconstructed by the pathologist.

J.H.A., M.D. Jackson, Michigan





Combined Orinase-insulin therapy enables you to "stabilize" a surprising percentage of "brittle" diabetics

The primary indication for Orinase remains in the stable, maturity-onset diabetic in whom Orinase usually can fully replace insulin therapy. But now a further indication has developed from the cumulative data of the past several years: many labile diabetics, who cannot be managed on Orinase alone, can benefit from the addition of Orinase to their insulin regimen.

A major benefit-stabilization

In the labile diabetic who successfully responds to joint insulin-Orinase management, the "peaks and valleys" of erratic blood sugar levels are rarely observed. The addition of Orinase greatly reduces sudden and unexpected changes...tends to "stabilize" even the "brittle" diabetic.

A major benefit-lessened insulin needs

The Orinase-stabilized labile diabetic generally requires less insulin than before the incursion of Orinase in his regimen. This lessening of insulin dosage is particularly advantageous in the patient who is insulin-dependent, but who reacts unfavorably – whether by lipodystrophy or otherwise – to insulin.

The derived benefits-less hypoglycemia, less anxiety, greater well-being

With stabilization, the hazards of shock or coma are diminished. Like the diabetic who is responsive to Orinase alone, the labile diabetic on combined therapy need no longer walk a slender tightrope between hypo- and hyperglycemia. The patient's fears are greatly lessened ...often to be replaced by the healthier outlook characteristic of *euglycemic* Orinase management.



The Upjohn Company Kalamazoo, Michigan



Now 2 ways to specify Carnation Evaporated Milk infant formula

In a recent nationwide survey, the evaporated milk formula was named as first preference by 96% of pediatricians and 66% of general practitioners

NEW!

for maximum convenience

CARNALAC is a standard Carnation Evaporated Milk formula, as usually specified – in convenient, ready-prepared form. The mother just adds water. Diluted 1:1, new Carnalac provides protein 2.8%; carbohydrate 7.1%; 3.2% fat; 400 I.U. Vitamin D per reconstituted quart; 20 calories per oz.



for maximum flexibility and economy

Carnation Evaporated Milk formula is readily adjustable when baby requires individualized feeding. The great economy makes the slight extra trouble of adding the carbohydrate very acceptable to many young parents.



Both provide the uniform high quality and proven performance of Carnation Evaporated Milk

*The carbohydrate of Carnalac diluted 1:1 consists of 4.9% lactose from the milk, plus 2.2% added maltose-dextrin syrup (approximately 5 parts maltose, 3 parts dextrins).

FOR VAGINAL HYVA MONILIASIS GENTIAN VIOLET VAGINAL TABLETS

The Only Specific Antimycotic Vaginal Tablet With A Gel Forming Base

A new vaginal therapy specifically designed to produce unmatched and outstanding results. Methylrosaniline chloride (gentian violet) has generally proved the most effective and specific agent for the treatment of vaginal candidiasis caused by the fungus Candida.

Hyva Gentian Violet Tablets virtually eliminate the principal disadvantages of present gentian violet preparations. They may be handled without staining and have psychological and aesthetic acceptance.

Hyva combines the fungicidal action of gention violet (1.0 mgm.) with three active surface reducing agents and bactericides.* These active ingredients have been incorporated into a mildly effervescent "gel" forming base which provides for maximum and prolonged effectiveness. Shorter treatment time is required without the usual messiness normally experienced.

One tablet intravaginally for 12 nights. When necessary one tablet twice daily may be recommended. Patient should take a Nylmerate Solution water douch a on arising and preceding next tablet application.



S.: J.A.M.A. 157:1594, April 30, 198, Oct. 5. 4. Bena B. and M. ocotti, C.: Lav. neuro-th. 17:7, arch 1956. 6. Berglund, 1956. 7.1 ml. H. A., Wood, J. A. oc. 67:780, May 9, 1957. Collister, m. Z., Elkins, H., Hilgr. Acad. Sc. 67:780 *1. Borrus, J. C.: J.A.M.A. 157:15 1955. 3. Lemere, F.: thwest Me 5. Sellia psichiat. 18:693, 1 (lordh, P. M., Blumenthal, B., and Dixon, H. H.: Ann. New York Acad. Sc. 67:789, May 9, 1,57, 9, Ga C. Rass. med. 34:233, 1, R. et al. J. Pediat. E-axis 20:27, Mg. 1957. Rklund, P. Annes-E. G. and St. Pierr Aklund, P 7. 12. Tucker, W. I.: South J. J. 50:1111, Sept. 195 5. Rolands , Aug 1957. 14. Whecker, W.: Klin. Mona - 1. Augenh ring. ital. T.: Oto-26(2):143, 1958. 16, 19, Feb. 103 J. Indian M. Prof. 97:66, F miglia, G.: Miner 1958. 10:218, M 41 1958. 24. McCler Arc.i. Ped 75:101, W [Rec. Med | GP Clinics 171:10 M. J. 51:309, April 1958, 27. Robinson, H. M., , S. and Peller, L.: Ne Med. 58:1285, April 15, 1958. ne 1958, 29. Reboul, E., Reboul, 28. Bouquerel, J., Naviau and ychol, 116 37:784, July 1958, 30. B M. and Dorgeuille, C.: Maroc 31. Lamphier, T. A.: Maryland M 7:627, Nov. 1958. 32. Leuke Med. Klin. 53:2113, Dec. 1958.

70-95%* of nervous, tense patients recovered or improved

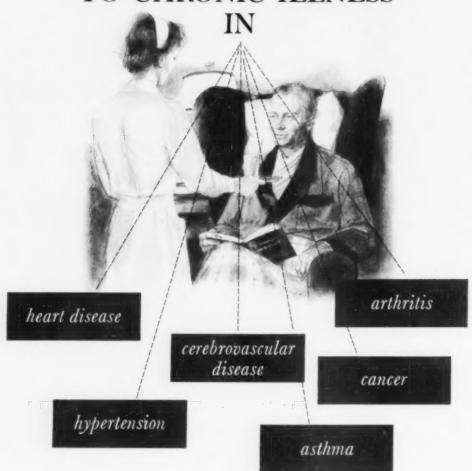
For your patients, Miltown promptly checks emotional and muscular tension. Thus, you will make it easier for them to ilead a normal family life and to carry on their usual work.

For you, the choice of Miltown as the tranquilizer means the comfortable assurance that it will relieve nervousness and tension without impairing your patient's mental efficiency, motor control, normal behavior or autonomic balance.

Miltown®

WALLACE LABORATORIES, New Brunswick, N. J.

AIDS EMOTIONAL ADJUSTMENT TO CHRONIC ILLNESS



Through effective relief of anxiety, irritability, insomnia and tension, Miltown aids the patient to "live with his disease," especially during difficult adjustment periods.

Miltown is well tolerated and "therefore well suited for prolonged treatment in chronic disorders with emotional complications." (Friedlander, H. S.: Am. J. Cardiol. 1:395, March 1958.)

Miltown

Available in 400 mg. scored and 200 mg. sugarcoated tablets; bottles of 50. Also available as MEPROSPAN® (200 mg. meprobamate continuous release capsules) and MEPROTABS* (400 mg. unidentifiable, coated meprobamate tablets).

When mental depression complicates chronic disease: DEPROL® (1 mg. benactyzine HCl plus 400 mg. meprobamate).

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OTOBIOT

ANTIBIOTIC / ANTIFUNGAL EAR DROPS

3.5 mg. neomycin (from sulfate) and 50 mg. sodium propionate per cc. - in 15 cc. dropper bottles.

*Lawson, G.W.: Diffuse Otitis Externa and Its Effective Treatment, Postgrad. Med. 22:503 (Nov.), 1957. AN OTIC SPECIALTY OF WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY



In Coronary Insufficiency...

Your high-strung angina patient often expends a "100-yd. dash" worth of cardiac reserve through needless excitement.





Curbs emotion as it boosts coronary blood supply

CONTROL OF EMOTIONAL EXERTION with Miltrate leaves him more freedom for physical activity.

IMPROVED CORONARY BLOOD SUPPLY with Miltrate increases his exercise tolerance.

Miltrate

Miltown® (meprobamate) + PETN

Each tablet contains: 200 mg, Miltown and 10 mg, pentaerythritol tetranitrate.

Supplied: Bottles of 50 tablets.

Usual dosage: 1 or 2 tablets q.i.d. before meals and at bedtime. Dosage should be individualized.

WALLACE LABORATORIES · New Brunswick, N. J.



CML-9159-59 "THADE-MARK



What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

A former patient sued his surgeon, the anesthetist, and the hospital for injuries he sustained when he fell from the operating table. At the trial of the action the following sequence of events were related.

The patient was lying on his back on the operating table, unconscious under the influence of an anesthetic, when the surgeon entered the operating room. At the head of the table an anesthetist was busily engaged in checking the patient's respiration and pulse, and in making a record of her findings. An orderly stood at the foot of the table.

While the surgeon prepared himself for the operation, he gave orders that the patient be placed on his side. The orderly proceeded to do so and held the patient by the hips in the position directed. The surgeon then advised the orderly to "get a strap" and "strap the patient." At this moment the surgeon turned his back to have a nurse tie his gown; the anesthetist turned her head to make an entry in her chart; and the orderly left the operating table to get the strap. The patient, unobserved, fell from the table onto the floor.

The basis of the patient's action is that the defendants are jointly and severally liable for the negligence which resulted in his injuries.

The defenses presented by the physician's attorney are a denial of negligence on the surgeon's part, or any responsibility for the negligence of others in the operating room. Though a chief surgeon is in command during an operation, his responsibility begins only with

the start of the operation itself. The orderly is an employee of the hospital and is not under the control of the surgeon. The anesthetist also is an independent professional whose services are paid for directly by the patient. If either the orderly or the anesthetist are negligent, the surgeon should not be held liable in the absence of a master-servant relationship.

The anesthetist testified that under the prevalent practice she has the duty of recording her findings. This of necessity directs her attention from the patient.

The orderly testified that he acted under the specific orders of the doctor to get a strap. Thus he had done nothing more than obey the orders of the surgeon in charge.

The jury returned verdicts in favor of the anesthetist and the hospital, and a verdict against the surgeon for \$10,757.45. On an appeal by the surgeon, how would you decide?

Answer on page 214a



in hypertension first rule out pheochromocytoma

Readily performed in the office unassisted, the reliable diagnostic test for pheochromocytoma with Regitine should be routine in hypertension. A potent antiadrenergic, Regitine is also valuable therapeutically in hypertensive crises and in peripheral vascular disease. A concise, illustrated booklet, the test with regitine for pheochromocytoma, is available at no charge. For your copy write: Medical Service Division, CIBA, Summit, New Jersey. Supplied: Ampuls (for intramuscular or intravenous use in diagnosis), each containing 5 mg. Regitine methanesulfonate in lyophilized form. Tablets for oral administration (white, scored), each containing 50 mg. Regitine hydrochloride.



2/2617MB

C 1 B 1

SUMMIT, NEW JERSEY

... SAN FRANCISCO TO TOKYO ...

.. LOS ANGELES TO LONDON ...

CHICAGO TO MEXICO CITY ..

.. NEW YORK TO PARIS ...

STOP USELESS 6,000 JET MILES

WITH A SINGLE DOSE OF

TUSSIONEX

A 'Strasionic' Antitussive · Dihydrocodeinone Resin - Phenyltoloxomine Resin

as advanced as stratospheric jets. One shrinks
 distance...the other stretches
 time between coughs. Both spell progress.



Stop Useless Debilitating Cough without

impairing protection of cough mechanism



2 oz.
Tussionex*
liquid . . .
or 12
Tussionex*



tablets... a six day supply

Adults:

1 tsp. or tablet q 12 h

Children:

Under 1 year..... 1/4 teaspoon q 12 h 1-5 years...... 1/2 teaspoon q 12 h Over 5 years...... 1 teaspoon q 12 h Each teaspoonful (5c.c.) or tablet Tussionex provides 5 mg, dihydrocodeinone and 10 mg, phenyltoloxamine as resin complexes

Rx only. Class B taxable narcotic.

For Literature, Write...

STRASENBURGH LABORATORIES

Originators of 'Strasionic' (sustained ionic) Release

minimize the problems of cow's milk allergy____

Varied symptoms of cow's milk allergy observed in 206 infants¹

symptoms

eczema

pylorospasm

colic

diarrhea

"very unhappy all the time"

cough, croup, choking, gagging, etc.

"nose cold all the time"

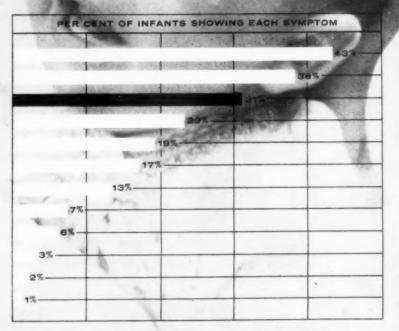
asthma

constipation

anorexia---"refuses milk entirely"

apathy, listlessness, cyanosis, collapse

urticaria, angioedema



All symptoms relieved by substituting soya formula for cow's milk formulas

specify Sobee

relieve Colic and other symptoms

in the milk-allergic infant ...

for treatment

Satisfactory results were achieved? in the management of gastrointestinal allergic symptoms in infants and children by use of a soya preparation.

All of the infants suffering from "colic" in a clinical study1 were promptly relieved of their symptoms after being placed on soya formula.

for prevention

When allergic tendencies exist in the parents or siblings, it is advisable to start the "potentially allergic" newborn on a milk substitute, such as Sobee.

for diagnosis

When cow's milk allergy was suspected from the presenting symptoms, it was found that "it was simpler and easier to remove cow's milk from the diet for a twenty-four to forty-eight hour trial period and substitute soybean milk than start an allergic study ... "1

Clein, N. W.: Pediat Clin. North America. Nov., 1956. pp. 949-962.
 Casparis, H.: Ann. Int. Med. 7: 625 (Nov.) 1933.
 Glaser, J.: Altergy in Cicianous, Springhess, Ill., Charlos C Thomas, 1956, chap. 67, p. 494.

to relieve milk-allergy symptoms while maintaining sound nutrition

specify

Sobee

Hypoallergenic saya formula, Mend Johnson. liquid . "instant" powder



for all your patients starting on corticoids

Kenacort safely starts your patients off right - with all the benefits of systemic corticosteroid therapy and few side effects to worry about. Increased antiallergic, antirheumatic or anti-inflammatory activity is provided on a low dosage schedule.1-3 Clinical improvement is accomplished without water or salt retention, 1-4 or adverse effect on blood pressure.1-3,5 A low sodium diet is not necessary.4,5 Gastrointestinal disturbances are negligible^{2,4,5} with less chance of peptic ulcer,4 and there is no psychic stimulation to distort the clinical response.1-3 This makes Kenacort particularly valuable in treating your "problem patients" - such as the obese or hypertensive and the emotionally disturbed.

- Freyberg, R.H.: Berntsen, C.A., Jr., and Hellman, L.: Arth. & Rheum. 1:215 (June) 1958.
 Sherwood, H., and Cooke, R.A.: J. Allergy 28:97 (March) 1957.
 Shelfey, W.B.: Harun, J.S., and Pilisbury, D.M.: J.A.M.A. 167:959 (June 21) 1958.
 Dubois, E.L.: California Med. 89:195 (Sept.) 1958.
 Hartung, E.F.: J.A.M.A. 167:973 (June 21) 1958.



Squibb Triamcinolone

for all your <u>allergic</u> <u>patients</u> requiring corticoids

Kenacort, in treating your allergic patients, has proved effective where other steroids have failed. Its potent antiallergic and anti-inflammatory properties provide rapid clinical improvement on a low dosage schedule1-3 with few side effects to worry about.1-5 (Kenacort is particularly valuable for your allergic patients with hypertension, cardiac disease, obesity and those prone to psychic disturbances.) In asthma, Kenacort therapy improves ventilation and increases vital capacity.2 Dyspnea and bronchospasm are usually relieved within 48 hours, and sibilant râles often disappear. Because of its relative freedom from untoward reactions, Kenacort provides corticosteroid benefits to many patients who until now have been difficult to control. Kenacort, too, is indicated in the treatment of arthritis and dermatoses.

SUPPLIED:

Scored tablets of 1 mg. — Bottles of 50 Scored tablets of 2 mg. — Bottles of 50 Scored tablets of 4 mg. — Bottles of 30 and 100

Squibb Quality - the Priceless Ingredient







to make ready

That's the patient with the right form of VITERRA on his regimen! This comprehensive vitamin-mineral formula is ideal in frank nutritional deficiency states (VITERRA Therapeutic) or in daily supplementation (VITERRA Capsules, VITERRA Tastitabs® and VITERRA Pediatric).

VITERRA Therapeutic: when high potencies are indicated.

VITERRA Capsules: 10 vitamins, 11 minerals for balanced daily supplementation. Now in a soft, soluble capsule this small for added patient convenience.

VITERRA Tastitabs: VITERRA the way children like it best. Chew it, swallow it, let it melt in the mouth. Dissolve it in liquids, or add it to the formula.

Or prescribe convenient, delicious VITERRA Pediatric in the unique new Metered-Flow bottle.

Dosage: usually one capsule or Tastitab daily.

Supplied: CAPSULES: in 30's and 100's. TASTITABS: bottles of 100. VITERRA PEDIATRIC: 50 cc. bottles.

ready to recover ready to rebuild ready to resist



VITERRA



New York 17, N. Y. Division, Chas. Pfizer & Co., Inc. Science for the World's Well-Being for dry, red, scaly, cracked, soap-abused hands



acid-mantle

CREME pH 4.2 - LOTION pH 4.5 DOME

The normal, protective acid mantle of the skin, which has been removed by washing with soap and detergents, is instantly restored and maintained by ACID MANTLE Creme and Lotion, and normal physiological function and appearance return to the skin.

Creme in 1 oz. tubes, 4 oz., 1 lb. and 5 lb. jars. Lation in 4 oz. squeeze battles, 1 pint, and 1₂ gallon ·

Sig.: Apply after wet work and after washing hands. Samples and literature on request.





Stops the Flame of Skin Inflammation . . .

domeboro tabs.

THE MODERN BUROW'S SOLUTION used all over the world ... for contact dermatitis due to alkalis, chemicals, oils, soaps, plastics, etc. Also in powder packets.





DOME CHEMICALS INC.

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in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

- Acts fast to relieve depression and its common symptoms: sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.
- · Restores normal sleep—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

EFFICACY AND SAFETY CONFIRMED IN OVER 3,000 DOCUMENTED CASE HISTORIES.1, 2, 3

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

References:

- Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
 Current personal communications; in the files of Wallace Laboratories.
- 3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958



for depression

eproľ

*WALLACE LABORATORIES, New Brunswick, N. J.



AFTER HOURS

Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.

Although I have two hobbies— Magic and Mineralogy — which I have little time for, I ran across another pastime that has been most gratifying.

As my youngsters grew up and entered various activities, (with their pictures in the local newspaper), I often wished I had another copy of the article to send to friends or relatives.

I began to think that others must feel the same as I, so now when I see a picture and

article of anyone that has been elected president or received an honor in an organization . . . is celebrating a Silver or Golden wedding anniversary, etc., I cut out the article and send it to the individual.

The warm, responsive notes and telephone calls I have received has made this little hobby a pleasure.

Chas. A. Preuss, M.D. Santa Barbara, Calif.

A pair of scissors, the daily paper, and Dr. Preuss is all set for an evening at his unusual, and very admirable hobby.



in <u>all</u> diarrheas

CREMOMYCIN



regardless of etiology



SID MERCK SHARP & DOHME

DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

CREMOMYCIN is a trademark of Merck & Co., Inc.

(sullingviszone GEIGY)

High Potency Uricosuric Agent

By significantly increasing renal excretion of urate and thus lowering plasma uric acid, the new highly potent uricosuric agent ANTURAN strikes directly at the basic metabolic defect in gout.

Exceptionally high potency...4 to 6 times that of probenecid*...is the outstanding characteristic of ANTURAN. The effectiveness of ANTURAN is retained indefinitely and tolerance to it is good.

Clinically, Anturan:

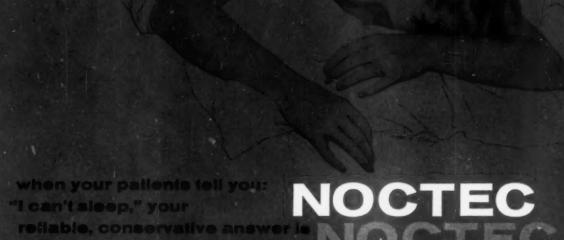
- · Prevents formation of new tophi
- · Causes gradual absorption of old tophi
- · Relieves chronic pain
- · Restores joint mobility

Anturan is not designed for the treatment of acute attacks for which Butazolidin* is recommended. Detailed Information On Request

тҮй, Т. F.; Burns, J. J., and Gutman, A. B. Arth. & Rheumat. 1:532, 1958. Антикан — (sulfinpyrazone GEIGY). Scored tablets of 100 mg, in bottles of 100.

BUTAZOLIDIN® (phenylbutazone GEIGY)

Ardsley, New York



NOCTEC

SENERAL PRACTICE "The general practitioner likes it ... can be given to patients of all ages and

DIOLOGY "patients with cardine disease... no proof that it is deleterious to the heart"

DERMATOLOGY "frequently the favorite of the dermatologist ... skin reactions from it are uncommon"

PSYCHIATRY "The psychiatrist often finds it the agent of choice...much less likely to produce mental

excitement." Current Corrent to Therapy: Sectation Mypaotic Drugs II. Chloral Hydrate New England J. Mod. 285-782 (feet, 11) 1865.

Adults: 2 or 271/2 gr. capsules or 1 or 2 teaspoonfuls of Noctee Solution 15 to 30 minutes before bedtime.

Children: 1 or 2 3 4 gr. capsules or 14 to 1 reaspoonful of Noctee Solution 15 to 30 minutes before bedtime.

Supply: 71/2 and 8 3, gr. capsules, bottles of 100. Solution, 71/2 gr. per 5 cc. teaspoonful, bottles of 1 pint.





no asthma **symptoms**—Tedral dependably protects chronic asthma patients against constriction, congestion and apprehension. Available in five convenient dosage forms, Tedral is the ideal antiasthmatic for continuous and safe prophylaxis at moderate cost.

Formula: theophylline, 2 gr.; ephedrine, 3 gr., phenobarbital, ½ gr. Dosage: 1 or 2 Tedral tablets q.4.h. plus 1 or 2 Tedral Enteric Coated with the regular dosage at bediime protect most patients 'round the clock,

TEDRAL

the dependable antiasthmatic



dosage problem with muscle relaxants?
no problem with

PARAFLEX

just 6 tablets daily is an average effective dose

Benefits of a 1- or 2-tablet dose persist for about 6 hours, relieving pain and stiffness and improving function in musculoskeletal disorders such as low back syndrome, sprains, strains, myalgia, fibrositis, and stiff neck. Side effects are rare, almost never require discontinuance of therapy.

Supplied: Tablets, scored, orange, bottles of 50, Each tablet contains Paratter, 250 mg.

McNEIL

McNeil Laboratories, Inc · Philadelphia 32, Pa.

L.S. Patent Pending

24845



Who Is This Doctor?

Identify the famous physician from clues in this brief biography:

He was born at Lisbon, Portugal, between 1210 and 1220 and died at Viterbo, Italy, on May 20, 1277. His real name was Petrus Hispanus, though he is known to history under a name acquired later in life. After his earlier studies in the Cathedral school at Lisbon he entered the University of Paris where he studied under Albertus Magnus.

The natural philosophy of Aristotle had a special attraction for him and he zealously pursued the study of medicine and theology.

On completing his studies he was called in 1247 as professor of medicine to the University of Sienna, which was at that time being greatly enlarged. Here he wrote his "Summulae Logicales" which for almost 300 years was the favorite textbook on logic.

While teaching at Sienna he made a collection of medical prescriptions—one of his several works on medicine.

In 1272 when Pope Gregory X came to Viterbo he appointed him his physician in ordinary. While occupying that position he wrote his "Thesaurus Pauperum" in which he gives a remedy for the diseases of every part of the body. This book was widely used but was in time variously interpolated.

His wide reputation for learning led to his selection as Archbishop of Braza in 1273 and shortly afterwards Gregory X appointed him Cardinal Bishop of Tusculum. After Gregory's death his successors in the Holy See, Innocent V and Adrian V ruled for only a short time.

Our doctor was then elected by consistory sitting at Viterbo and crowned Pope on September 20, 1276.

Amid the cares of the papacy he found time for scientific studies which were more congenial to him than the business of the Curia. Because of his health and energy his reign was expected to be long and fruitful but only eight months after his installation he died of injuries received when a scaffolding collapsed.

Can you name this doctor? Answer on page 214a.





Record of patient with congestive failure, treated at a leading Philadelphia hospital. Photos used with permission of the patient.

marked pitting edema (4+) cleared in 4 days with Esidrix

Highest fluid yields, lowest blood-pressure levels yet achieved with oral diuretic-antihypertensive therapy.

Indicated in:
congestive heart failure
hypertension
hypertensive vascular disease
premenstrual edema
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edema of pregnancy steroid-induced edema nephrosis nephritis C I B A SUMMIT, N. J. DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day,

SUPPLIED: Tablets, 25 mg. (pink, scored); bottles of 100 and 1000. Tablets, 50 mg. (yellow, scored); bottles of 100 and 1000.

2/2695M

remember

(recerping CIRA)

for the anxious hypertensive with or without tachycardia



1.5...81-year-old patient with complaint of painless hematuria admitted to hospital on 3/3/59. Past history included congestive heart failure at 15 years' duration. Clinically significant symptoms: expiratory wheezes over entire chest, bilasteral coarse rales at both bases, slight abdominal distention (without evidence at ascites), palpable liver 2-3 fingerbreadths below rib cage, bilateral pitting edema (4+1 of pretibilal and ankle areas. Admission diagnosis: hematuria of unknown origin, arteria-scierotic cardiovascular disease, poorly compensated heart failure, and chronic pulmonary tibrasis with pulmonary



Patient was put on regimen of bed rest, moderate solt restriction, digitalis and pulmonary decongestants. When ankle edema, hepatic congestion and rales foiled to clear by 3/6, Esidrix 50 mg. b.i.d. was ordered. By 3/8 L.S. had lost 3 pounds. Rales decreased, there was 1+ pitting edema of ankle area only. He felt more comfortable, was able to enjoy reading newspapers and magazines in bed.



Ambulatory on the 4th day of Eside therapy, 1,5 visited his neighbors down the hall, played checkers with another patient. There was no evidence at askle edema. By 3/11, patient's weight had dropped 2 more pounds and sales were gone. Patient abordine crystoscopy and following on a small bleeding polyp in his blooder on 3, 12 very well. On 3/14 he was discharged.

Patient L.S. Date	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13
Urinary Output (ml.)	840	690	960	2140	1230	660	1220	1350		
Weight (lbs.)	139				136			134	20.00	-
Esidrix Dosagi (ma./day)	0	0	50	100	100	100	100	100	50	100

ESICPIX (hydrochlorothiazide CIBA)

- relieves edema in many patients refractory to other diuretics¹
- often produces greater weight loss than parenteral mercurials or chlorothiazide²
- provides a greater average reduction in blood pressure than chlorothiazide³
- is exceptionally safe...reduces the likelihood of electrolyte imbalance

1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. 3:144 (Feb.) 1959. 2. Clark, G. M.: Clinical report to CIBA. 3. Dennis, E. W.: Clinical report to CIBA.

"ankle fits"

there's pain and inflammation here... it could be mild or severe, acute or chronic, primary secondary fibrositis — or even early rheumatoid arthritis

more potent and comprehensive treatment than salicylate alone

. . assured anti-inflammatory effect of low-dosage corticosteroid . . . additive antirheumatic action of corticosteroid plus salicylate²⁻³ brings rapid pain relief; aids restoration of function . . . wide range of application including the entire fibrositis syndrome as well as early or mild rheumatoid arthritis

more conservative and manageable than full-dosage corticosteroid therapy—

.. much less likelihood of treatment-interrupting side effects¹⁻⁶ . . . reduces possibility of residual injury . . . simple, flexible dosage schedule

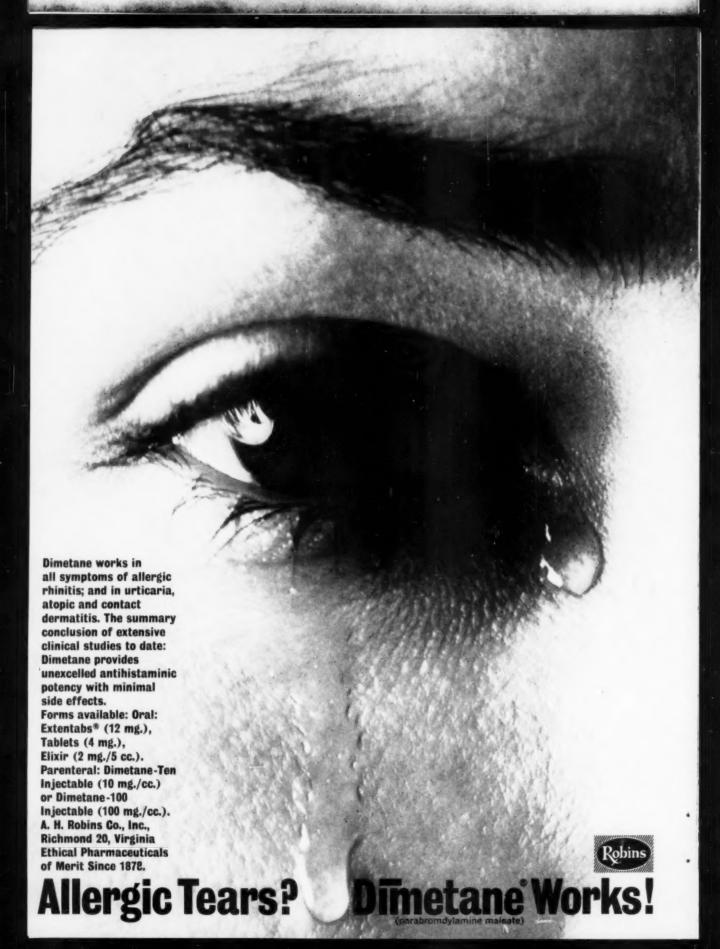
THERAPY SHOULD BE INDIVIDUALIZED

acute conditions: Two or three tablets four times daily. After desired response is obtained, gradually reduce daily dosage and then discontinue.

subacute or chronic conditions: Initially as above. When satisfactory control is obtained, gradually reduce the daily dosage to minimum effective maintenance level. For best results administer after meals and at bedtime.

precautions: Because sigmagen contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of Sigmagen.







This is the patient who "just wasn't hungry."

for the convalescent, geriatric, and adolescent patient: an effective, pleasant appetite stimulant.

With FORMATONE, you can help your patients regain and maintain a good appetite. FORMATONE contains vitamins B_{12} and B_1 —and sorbitol, to improve their effectiveness. Sorbitol enhances the absorption of vitamin B_{12} and the intestinal synthesis of vitamin B_1 . FORMATONE also contains vitamin B_6 to aid fat and protein metabolism.

These factors, plus the delicious taste of a sherrywine base, all contribute to strong appetite activation.



activates the appetite

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VITAMIN B TONIC

In peptic ulcer,

five aids to comprehensive management with 1 preparation

Added to the therapeutic regimen, ALUDROX SA simplifies your comprehensive management of the peptic-ulcer patient. With ALUDROX SA you can relieve the patient's pain, reduce his acid secretion, inhibit gastric motility, calm his emotional distress, and promote healing of his ulcer.

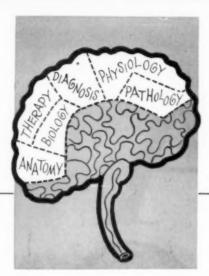
Ambutonium, an important new anticholinergic of demonstrated usefulness, is incorporated in ALUDROX SA to provide potent antisecretory and antimotility effects without significant side-reactions.

anticholinergic • antacid • sedative • anticonstipant • pepsin-inhibitor

ALUDROX® SA

Suspension and Tablets. Aluminum Hydroxide Gel with Magnesium Hydroxide, Ambutonium Bromide, and Butabarbital, Wyeth.





Mediquiz

These questions were prepared by the Professional Examination Service, a division of the American Public Health Association. Answers will be found on page 214a.

- 1. The management and prognosis of the adrenogenital syndrome has been improved by:
 - A) Bilateral adrenalectomy.
 - B) ACTH
 - C) Cortisone.
- D) Complete defeminization of the patient by means of plastic surgery.
 - E) Irradiation of the adrenals.
- 2. In an untreated hyperthyroid patient there is a relatively rapid onset of fever to 101°, increasing tachycardia, marked increased in weight loss, and nervousness. Which one of the following therapies would you employ to ameliorate the syndrome most rapidly?
- A) X-rays directed to the thyroid gland in suitable dosage.
 - B) Propylthiouracil or tapazole therapy.
 - C) Deep sedation and immediate surgery.
 - D) Radioiodine therapy.
 - E) Iodides by mouth in appropriate dosage.
- 3. Which of the following is an abnormality which would not be expected in a classical case of Cushing's syndrome?
 - A) Menstrual disturbances.
 - B) Purple striae.
 - C) Hypotension.
 - D) Diabetic glucose tolerance curve.
 - E) Osteoporosis.

- Prominence of the eyes in classical Graves' disease is usually caused by:
- A) Widening of the palpebral fissure due to lid spasm.
- B) Fatty infiltration of the extra-ocular muscles
- C) Deposits of cholesterol in the periorbital tissues.
 - D) Edema of the eyelids.
- E) Proptosis of the globes due to hypertrophy of retro-orbital tissue.
- 5. The ovarian tumor in the female which corresponds to the seminoma in the male is the:
 - A) Teratoma.
 - B) Krukenberg's tumor.
 - C) Dysgerminoma.
- D) Mucoid fibroepithelioma (Brenner's tumor).
 - E) Arrhenoblastoma.
- The prognosis for patients with amyotrophic lateral sclerosis is:
- A) Usually good as the virus is overcome by the marked gliosis which occurs in the central nervous system.
- B) Always poor, the bulbar type being the worst.
 - C) Good; the disease is self-limited and not Continued on page 80a



s the

to

in over-all care of baby's skin

Desitin BABY Lotion is the alpha to omega for keeping baby's skin healthy, clean and supple through its...

- LANO-DES*... Desitin's soothing, lubricating liquid lanolin.
- HEXACHLOROPHENE . . . effectively protects against ammoniaproducing and other common skin bacteria.
- VITAMINS A and E ... important to skin health and smoothness.
- SPECIAL EMULSIFIERS... to cleanse baby's skin gently, safely, and thoroughly — yet free from mineral oil.

Desitin BABY Lotion is entirely safe, bland, non-toxic. Non-greasy, stainless; free-flowing, pleasantly scented.

antibacterial cleanses conditions

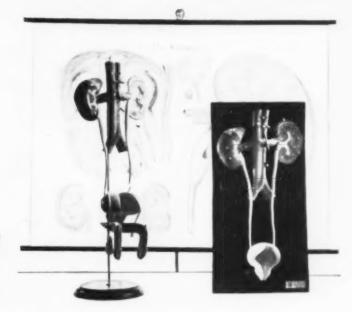


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DESITIN CHEMICAL COMPANY

812 Branch Ave., Providence 4, R. I.

*trade mark



in genitourinary tract infections

6,800,000

courses of treatment* and still negligible development of bacterial resistance with

FURADANTIN

brand of nitrofurantoin

"...may be unique as a wide-spectrum antimicrobial agent that...does not invoke resistant mutants."

Waisbren, B. A., and Crowley, W.: A.M.A. Arch. Int. M. 95:653, 1955.

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

*Conservative estimate based on the clinical use of Furadantin Tablets and Oral Suspension since 1953.

Illustration through courtesy of Clay-Adams, Inc., New York

NITROFURANS—a unique class of antimicrobials—neither antibiotics nor sulfonamides EATON LABORATORIES, NORWICH, NEW YORK progressive.

- D) Good; it may occasionally, however, leave lower motor neuron palsies.
- E) Always poor except for the bulbar type, which frequently disappears spontaneously.
- 7. The condition in which septicemic clostridial infection is most often seen is:
 - A) Crushing injuries.
 - B) Osteomyelitis.
 - C) Uterine infection.
 - D) Abscessed teeth.
 - E) Penetrating wounds.
 - 8. In true smallpox the organ of the body

least affected is the:

- A) Kidneys.
- B) Bone marrow.
- C) Spleen.
- D) Adrenals.
- E) Liver.
- About 75 percent of the cases of actinomycosis of the gastrointestinal tract are located in the;
 - A) Sigmoid colon.
 - B) Descending colon.
 - C) Rectum.
 - D) Transverse colon.
 - E) Ileocecal region.

the "full-range" oral hypoglycemic agent



Trademark, brand of Phenformin

in the management of mild, moderate and severe diabetes (juvenile and adult)

- 10. The Councilman bodies found in cases of yellow fever are:
 - A) Necrotic liver cells.
 - B) Necrotic kidney tissue.
 - C) Inclusion bodies.
 - D) Virus particles.
 - E) Clumps of white cells.
- 11. The most common form of benign neoplasms of the tongue is a:
 - A) Lingual thyroid.
 - B) Lymphangioma.
 - C) Cavernous hemangioma.
 - D) Capillary hemangioma.
 - E) Papilloma.
- 12. In an outbreak of infectious hepatitis mainly among children attending two elementary schools the most appropriate measure would be to:
- A) Immunize all other pupils with gamma globulin.

- B) Make a door-to-door survey of the section to search for hidden cases and a common source of infection.
- C) Publicize the facts and advise general measures of personal and home hygiene and sanitation in the area.
 - D) Close the schools.
- E) Isolate the cases and immunize the known contacts with gamma globulin.
- 13. If blood from a person with the "sickle cell trait" is transfused into another person, the type of individual in whom the cells would show an abnormally short survival rate is:
 - A) Any one who has Banti's syndrome.
- B) Any one with an acquired hemolytic anemia and positive Coombs' test.
- C) Any one who has congenital hemolytic jaundice.
 - D) Any normal person.
 - E) Any one who has sickle cell anemia.

DBI (N1-β-phenethylbiguanide HCI) is an entirely new oral hypoglycemic compound, different in chemical structure, mode of action, and in spectrum of activity from the sulfon-ylureas. DBI is usually effective in low dosage range (50 to 150 mg. per day).

"full - range" hypoglycemic action — DBI lowers elevated blood-sugar and eliminates glycosuria in mild, moderate and severe diabetes mellitus...

brittle diabetes, juvenile or adult—DBI combined with injected insulin improves regulation of the diabetes and helps prevent the wide excursions between hypoglycemic reactions and hyperglycemic ketoacidosis.

stable adult diabetes - satisfactory regulation of diabetes is usually achieved with DBI alone without the necessity for insulin injections.

juvenile diabetes — DBI often permits a reduction as great as 50 per cent or more in the daily insulin requirement.

primary and secondary sulfonylurea failures—DBI alone, or in conjunction with a sulfonylurea, often permits satisfactory regulation of diabetes in patients who have failed to respond initially or who have become resistant to oral sulfonylurea therapy.

smooth onset—less likelihood of severe hypoglycemic reaction—DBI has a smooth, gradual blood-sugar lowering effect, reaching a maximum in from 5 to 6 hours, and a return to pretreatment levels usually in 10 to 12 hours.

safety-daily use of DBI in the rapeutic dosage for varying periods up to $21\!\!/_{\!2}$ years has produced no clinical toxicity.

side reactions—side reactions produced by DBI are chiefly gastrointestinal and occur with increasing frequency at higher dosage levels (exceeding 150 mg, per day). Anorexia, nausea or vomiting may occur—but these symptoms abate promptly upon reduction in dose or withdrawal of DBI.

supplied - DBI, 25 mg. scored, white tablets - bottle of 100.

IMPORTANT — before prescribing DBI the physician should be thoroughly familiar with general directions for its use, indications, dosage, possible side effects, precautions and contraindications, etc. Write for complete detailed literature,

an original development from the research laboratories of

u. s. vitamin & pharmaceutical corporation
Arlington-Funk Laboratories, division • 250 East 43rd Street, New York 17, N. Y.

DIARRHEAS DYSENTERIES For more than 20 years,

Pectin has been the key therapeutic ingredient of pharmaceutical specialties used specifically for the treatment of diarrheas, dysenteries and other intestinal disorders. As early as 1933, the detoxicating effect of Pectin was attributed to its galacturonic acid content.

PECTINOIN THE NAME IS NOT ENOUGH

Adequate dosage is essential. It is the galacturonic acid intake (2 to 4 grams of Pectin N.F. per day) that determines the effectiveness. In many instances the use of relatively inert adsorbent fillers has limited the amount of the therapeutic detoxicant, PECTIN, in the formulation to an inadequate dosage.

Exchange Brand Pectin N.F.

Increases bulk and fluid retention of upper intestinal contents and imparts a smooth, gelatinous consistency • Lubricates the intestinal wall • Promotes normal peristalsis without mechanical irritation • Reduces intestinal pH • Inhibits growth of many putrefactive and otherwise undesirable microorganisms in the intestines without affecting normal flora • Promotes assimilation of essential nutrients • Helps to conjugate and eliminate toxins • Reduces toxic side effects of therapeutic agents.

Exchange Brand Citrus Pectin and Pectin derivatives widely used in therapeutic specialties include:

PECTIN N.F. * POLYGALACTURONIC ACID * PECTIN CELLULOSE COMPLEX * GALACTURONIC ACID * These are available to the medical profession in specialties of leading pharmaceutical manufacturers.



Sunkist Growers

PRODUCTS SALES DEPARTMENT PHARMACEUTICAL DIVISION ONTARIO, CALIFORNIA



Atopic dermatitis (female, aged 42)

"Itch completely gone -- dramatic relief!"



Chronic bronchial asthma (male, 62)

"This patient, on his own and his wife's admission, is better, has had more relief than he has had in 35 years..."



Polyarteritis modosa (suspected) (male, 19)
"Equivalent to prednisone Seemed to
have less acre on Derovil."



Urticaria (one week after tetanus antitoxin)
-- (female, 26)

"After 4 tablets stat, required no further treatment. Good results, sense of well-being."



"Marked diminution of symptons rince ouset of therapy." (Donage out table tid.)

EXCELLENT NATION-WIDE REPORTS ON



DERONIL

FROM DOCTORS WRITING TO SCHERING*

Actual quotations from physicians' reports in the files of the Schering Department of Professional Information.

Herpes Zoster (female, 55)

"Results are outstanding.... Pain decreased after first three doses. Zoster dried in 4 days." (Dosage: one tablet t.i.d.)



Rheumatoid arthritis (male, 63)

"Full relief, resumption of work." (Dosage: one tablet t.i.d. to one tablet daily)

Schering



= pholiative dermatitis (male, 84)

" nidruelous results - skin completely cleared except over anteles where there is



posting superior steroid results

as actual trial-in-practice confirms investigative data

DERONIL

benefits of the third major steroid advance in every steroid indication

- · highest anti-inflammatory activity
- · lowest steroid dosage
- · minimal diabetogenic effects
- avoidance of "new" side effects muscle weakness, anorexia, weight loss

Consult Schering literature for details on indications, dosage, precautions and contraindications.

"casy-break" tablet for patient convenience



Supplied = 0.75 mg, tablets.

Dirront = 1.m. = brand of dexamethasone.

Schering

SCHERING CORPORATION + BLOOMFIELD, NEW JERSEY

except over anteres where there is

the anatomy of touch ... EXQUISITE SENSIBILITY

An alert and exquisite "fifth sense" in clinical diagnosis is tactile sensibility, as, for example, in discerning the presence and quality of a nodule in the thyroid.

Patients esteem their own tactile sensibilities, as well, and notably in the choice of a prophylactic, RAMSES,® for example, in which utmost sensitivity is preserved—"built-in." The superior prophylactic, RAMSES is a tissue-thin rubber sheath of amazing strength, of solid clinical reliability, and yet smooth as silk, transparent as gossamer, almost out of human awareness.

RAMSES enables the physician to rely on rigorous cooperation for putting an end to the cycle of re- and re-infection with Trichomonas, due most often to unprotected sexual intercourse. Without imposition, or deprivation, for the sake of cure, routinely using RAMSES will assure positive clinical control with a minimum of awareness, for in RAMSES the sensitivity is "built-in."



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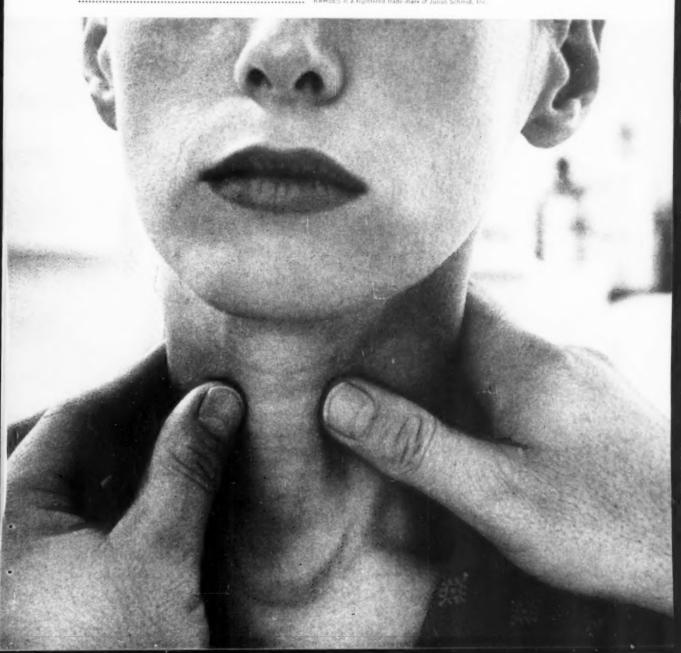






Weiner, H. H.: Clin. Med. 5:25 (Jan.) 1958.
 Giorlando, S. W., and Brandt, M. L.: Am. J. Obst. & Gynec. 76:666 (Sept.) 1958.

JULIUS SCHMID, INC., 423 West 55th Street, New York 19, N. Y.
RAMSES is a resistered trade-mark of Julius Schmid, Inc.





... WHEN YOU PRESCRIBE NEW

MORNIDINE

A new drug with specific effectiveness in nausea and vomiting of pregnancy, Mornidine eliminates the ordeal of morning sickness.

With its selective action on the vomiting center, or the medullary chemoreceptor "trigger zone," Mornidine possesses the advantages of the phenothiazine drugs without unwanted tranquilizing activity.

Doses of 5 to 10 mg., repeated at intervals of

six to eight hours, provide excellent relief all day. In patients who are unable to retain oral medication when first seen, Mornidine may be administered intramuscularly in doses of 5 mg. (1 cc.).

Mornidine is supplied as tablets of 5 mg. and as ampuls of 5 mg. (1 cc.).

G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.



MODERN MEDICINALS

These brief résumés of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Anectine Flo-Pack, Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, New York. Anectine brand of succinylcholine chloride sterile powder in a plastic injection unit for the preparation of Anectine infusions. Easy to store, requires no refrigeration or expiration date, may be used with vacuum or non-vacuum solution bottles without separate needles or syringes. Administered intravenously to produce full skeletal muscle relaxation during anesthesia. Sup: Units of 500 mg. or 1000 mg.

Anturan, Geigy Pharmaceuticals, Ardsley, New York. For long-range management of chronic gout. *Dose:* Usual dose, 1 tablet 4 times daily. *Sup:* Scored tablets of 100 mg. each in bottles of 100.

Betadine Vaginal Gel, Tailby-Nason Company, Inc., Dover, Delaware. Safe, effective therapy in the treatment of a variety of vaginal conditions, containing as its active ingredient povidone-iodine. Indicated in treatment of trichomonas vaginalis, moniliasis and non-specific vaginitis. *Use:* As directed by physician. *Sup:* Applicator tubes of 3 oz.

Cardiografin, E. R. Squibb & Sons, Division of Olin-Mathieson Chemical Corp., New York, New York. Tri-iodinated radiopaque medium, diatrizoate methylglucamine, for use in angiocardiography and aortography. Specifically intended as a diagnostic aid in the determination of cardiac and vascular congenital defects and acquired vascular disease. May be introduced into a vessel or directly into the heart. Sup: Single-dose vials of 50 cc.

Cerose Pediatric, Ives Cameron Company, Philadelphia, Pennsylvania. New dosage form, each teaspoonful of which includes 7.5 mg. dextromethorphan HBr, 5 mg. phenindamine tartrate, and 5 mg. phenylephrine HC1 in addition to balance of CEROSE formula. Indicated cough control in children. Dose: Children under 4 yrs., ½ teaspoonful 1 to 4 times daily. Children over 4 yrs., 1 to 2 teaspoonfuls 1 to 4 times daily. Sup: Bottles of 1 pt.

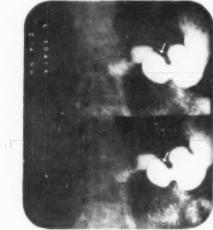
Chloromycetin Succinate, Parke, Davis & Company, Detroit, Mich. New injectable form of chloramphenicol. Compound is from the sodium salt of the monosuccinate ester of chloramphenicol. Indicated for the same broad coverage against disease-producing organisms as produced by other forms of chloromycetin products. Use: Administered by intramuscular, intravenous or subcutaneous injection as directed by physician. Sup: Powdered form in 10 cc. steri-vials for dilution before injection.

Continued on page 92a

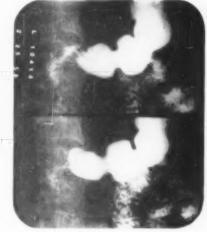
relieve the tension



-and control its G.I. sequelae



Patient A.S., age 53. Intermittent crises of severe pain over 2 year period; hospital management with Sippy regimen symptoms recurred after each sojourn



PATRIBAMATE (Tabs. it.i.d. and H.S.): prompt relief of symptoms. Radiograph (21 days later) confirms healing of minute lesser curvature gastric uleer crater.

predictable results in the control

of tension and G.I. trauma

Pathibamate

Used prophylactically in anticipation of periods of emotional stress, or therapeutically to relieve tension and curb hypermotility and hypersecretion. PATHIBAMATE is particularly well-formulated for the control of gastrointestinal disorders.

PATHBAMATE combines Meprobamate (400 mg.) - the noted tranquilizer-muscle relaxant widely accepted for safe management of tension and anxiety states - and Pathinox (25 mg.) - an extremely well-tolerated anticholinergic, long noted for prompt symptomatic relief based on peripheral atropine-like action with few side effects,

Duodenal üleer, gastrie üleer, intestinal colic, spastic and irritalde colon, ileitis, esophageal spasm, auxiery neurosis with gastrointestinal symptoms, gastric hypermotility.

Supplied:

Bottles of 100 and 1,000, Each tablet (vellow, 'sscored) contains Meprobamate, 100 mg., Parintes Tridibeacthyl Chloride, 25 mg.

Administration and Dosage

I tablet three times a day at mealtimes and 2 tablets at bedtime. Adjust dosage to patient response, Contraindicated in glaucoma, pyloric obstruction, and obstruction of the urinary bladder neck

Also Available: Parmion in four forms - Tablets of 25 mg., plain (pink) or with phenobarhand, 15 mg. (blue);

Parenteral = 10 mg, rv. = 1 rr. ampuls.

Pediatric Drops = 5 mg, cc. - dropper vials of 15 cc.

*Parmins is now offered as tridibexethal oblaide instead of the indide, an advantage permitting wider use, since the latter could interfere with the results of certain thyroid function tests.



LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

Po Not Confuse it with Tranquilizers With Tranquilizers 100 An Eli

p-acetamidobenzoic acid salt of 2-dimethylaminoethanol

Deaner is a gentle, slow-acting antidepressant—a totally new molecule. It counteracts mild depression, thereby differing from tranquilizers or sedatives which may aggravate depression.

Deaner is unlike ordinary stimulant drugs in that it gradually leads to increased useful energy and alertness, clearer mentation and emotional normalization.

Deaner does not produce the undesirable side effects of amphetamine-like drugs...no hyperirritability or jitteriness, no excessive motor activity, no loss of appetite, no elevation of blood pressure or heart rate, no letdown on discontinuance.

Deaner is indicated in a wide variety of disturbances associated with or caused by mild depression. It is compatible with virtually all other medications.

Deaner also finds a broad area of usefulness in children with short attention span, behavior problems, and learning defects.

Contraindications: Grand mal epilepsy or mixed types of epilepsy with a grand mal component.

DOSAGE: Initially, 1 tablet (25 mg.) daily in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Full benefits may require two weeks or more of therapy.

'Deaner' is supplied in scored tablets containing 25 mg, of 2-dimethylaminoethanol as the p-acetamidobenzoic acid salt. In bottles of 100,

In Mild Depression

and many other emotional and behavioral problems





on the job again

through effective relief and rehabilitation



For the patient who does not require steroids

PABALATE®

Reciprocally acting nonsteroid antirheumatics . . . more effective than salicylate alone.

In each enteric-coated tablet:

Sodium salicylate U.S.P....0.3 Gm. (5 gr.) Sodium

para-aminobenzoate0.3 Gm. (5 gr.) scorbic acid50.0 mg. Ascorbic acid

or for the patient who should avoid sodium

PABALATE® - Sodium Free Pabalate, with sodium salts replaced by potassium salts.

In each enteric-coated tablet:

Potassium salicylate 0.3 Gm. (5 gr.)

para-aminobenzoate0.3 Gm. (5 gr.) Ascorbic acid

For the patient who requires steroids

PABALATE - HC (PABALATE WITH HYDROCORTISONE)

Comprehensive synergistic combination of steroid and nonsteroid antirheumatics... full hormone effects on low hormone dosage . . . satisfactory remission of rheumatic symptoms in 85% of patients tested

In each enteric-coated tablet:

Hydrocortisone (alcohol)	2.5	mg
Potassium salicylate		
Potassium para-aminobenzoate		
Ascorbic acid	50.0	mg



PABALATE PABALATE HC

For steroid or non-steroid therapy: SAFE DEPENDABLE ECONOMICAL A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA . Ethical Pharmaceuticals of Merit since 1878

DIUPRES .. plus other antihypertensive agents

with DIUPRES, fewer patients require addition of other antihypertensive agents

DIUPRES is adequate by itself for many hypertensives

DIUPRES PROVIDES "BROAD-BASE" ANTIHYPERTENSIVE THERAPY ... is effective by itself in a majority of patients with mild or moderate hypertension, and even in many with severe hypertension

greatly improved and simplified management hypertension

DIURIL WITH RESERPINE

the first "wide-range" antihypertensive—effective in mild, moderate, and severe hypertension

- nore hypertensives can be better controlled with DIUPRES alone than with any other agent . . . with greater simplicity and convenience, and with decreased side effects
- o can be used as total therapy or primary therapy, adding other drugs if necessary
- o in patients now treated with other drugs, can be used as replacement or adjunctive therapy
- a should other drugs need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced
- organic changes of hypertension may be arrested and reversed... even anginal pain may be eliminated
- a patient takes one tablet rather than two... dosage schedule is easy to follow
- o economical

DIUPRES-500 500 mg. DIURIL (chlorothiazide),

0.125 mg. reserpine.

One tablet one to three times a day.

DIUPRES-250 250 mg. DIURIL (chlorothiazide),

0.125 mg. reserpine.

One tablet one to four times a day

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DISTRES AND DISTRE (CHEOROTHIAZIOS) AND TRADEMARKS OF MERCH & CO., INC.

- Clinilab, Ames Company, Inc., Elkhart, Indiana. Compact unit providing five Ames Urine Diagnostics for early and reliable detection. Contains one bottle each of Uristix, Acetest, Clinitest, Ictotest, and Hematest together with all essential materials for testing.
- CR-Test, Hyland Laboratories, Los Angeles, California. New rapid slide test for determination and quantitation of C-reactive protein. Combining C-reactive protein antibody with polystyrene latex particles produced a reagent which gives easily visible test results in one to two minutes on a glass slide. For screening procedure, a drop of patient's serum is mixed with CR-Test reagent on a glass slide. If C-reactive protein is present, flocculation will occur. Sup: Kits containing Latex Anti C Reactive Protein Reagent, Glycine Saline Buffer Diluent, capillary pipettes and two divided glass slides.
- Dermaject, The Columbus Pharmacal Company, Columbus, O. Injectable, each cc. of which contains 25 mg. riboflavin-5-monophosphate sodium, 5 mg. pyridoxine HCl, 2.5 mg. biotin, and 500 mcg. vitamin B₁₂. Indicated to provide massive dosage therapy of those B-Complex vitamins found by clinical tests to favorably influence acne, psoriasis, and seborrheic dermatitis. *Dose:* Intramuscularly, as directed by physician. *Sup:* Multiple dose vials of 10 cc.
- Ilosone Sulfa, Eli Lilly & Company, Indianapolis, Indiana. Scored, yellow tablets, each containing 125 mg. erythromycin ester and 167 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine. Indicated in the treatment of mixed infections, particularly of the respiratory, gastrointestinal, and genito-urinary tracts. Dose: Adults, 2 tablets every six hours. Sup: Bottles of 24 and 100.

- Ionamin, Strasenburgh Laboratories, Rochester, New York. Yellow capsules containing 30 mg. phenyl-tert-butylamine as a resin complex, or grey and yellow capsules containing 15 mg. Indicated to provide 10-14 hour non-emphetamine appetite curb where appetite appeasement only is required. Dose: One capsule daily before breakfast or 10-14 hours before retiring, as directed by physician. Sup: Either size in bottles of 100 and 400.
- Neo-Polycin Otic, Pitman Moore Company, Division of Allied Laboratories, Inc., Indianapolis, Indiana. Drops, containing in each Gram 1% dyclonine hydrochloride, 2 mg. neomycin (present as sulfate), and 4000 units polymyxin B sulfate in a special modification of the Fuzene base. Indicated for the treatment of pain, pruritus, or infection in otitis externa. *Use:* Place 1 or 2 drops in the external auditory meatus morning and evening, allowing it to run into the canal. *Sup:* Bottles of 8 Grams.
- Paremycin Elixir, The G. F. Harvey Company, Saratoga Springs, New York. Elixir, containing in each tablespoonful 150 mg. neomycin sulfate and 1 mg. tincture opii oil. Indicated as an anti-diarrheal. *Dose:* Average, 1 tablespoonful after each bowel movement. Sup: Bottles of 3 oz. and 6 oz.
- Pentothal Sodium, Abbott Laboratories, North Chicago, Illinois. Sterile powder in new multiple-dose ampuls of 6.25 Gm. and 12.5 Gm. The 6.25 Gm. ampul when added to 250-cc. container of water for injection makes a 2.5% solution of Pentothal. The 12.5 Gm. ampul may be added to a 500-cc. container of water for injection to make a 2.5% solution. For a 5% solution half the Concluded on page 102a

Antibacterial / Anti-inflammatory

CORTISPORIN' OTIC DROPS

Relieves "incessant itching" and inflammation

Eradicates *Pseudomonas* and other common causes of otitis

Helps restore normal acid mantle

Rarely sensitizes

Contains: 'Aerosporin'® brand Polymyxin B Sulfate, Neomycin Sulfate, and Hydrocortisone (free alcohol) in a sterile, slightly acid, aqueous suspension. Available in dropper bottles of 5 cc.



for infected and inflamed ears

Antibacterial / Antifungal

Counteracts "sogginess" of ear canal

Eradicates *Pseudomonas* and other common causes of otitis

Hygroscopic

Antifungal for Monilia and Aspergillus

Helps restore normal acid mantle

Rarely sensitizes

May be used prophylactically in patients with recurring "swimmer's ear."

Contains: 'Aerosporin'® brand Polymyxin B Sulfate in Propylene Glycol with 1% Acetic Acid, Sterile,

Available in dropper bottles of 10 cc.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

when they come to with a G.U. infection because of pain

Azotrex

Symptoms of urgency, frequency, painful urination, incomplete emptying of the bladder, and backache usually first cause the patient to seek help from his physician. AZOTREX Capsules provide both the rapid symptomatic relief desired by the patient, and the vigorous antibacterial measures required for control of the underlying infection.

rapid relief of pain

Specific urinary analgesic action of phenylazodiamino-pyridine HCl—the azo dye long noted as the standard G.U. tract analgesic—offers dramatic relief of painful symptoms. Visual confirmation of prompt action is the change in color of urine the patient sees shortly after taking his first capsules of AZOTREX.

early control of infection

(in the urine and at the foci of infection)

Combined activity of Tetreex (tetracycline phosphate complex) and sulfamethizole offers unusually effective control of the gram-negative and gram-positive bacterial components identified in a great number of acute and chronic infections of the urinary tract. AZOTHEN is especially indicated in mixed infections.

TETREX is the rapid and efficiently absorbed oral form of the antibiotic well-known for its broad-spectrum activity; singular freedom from such dangerous toxic reactions as blood dyscrasias, renal toxicity, hepatitis, neurotoxicity, anaphylaxis; and minimal undesirable side effects. TETREX is effective against a wide variety of organisms, including streptococci, staphylococci, pneumococci, gonococci, E. coli, and A. aerogenes. The excellent clinical results achieved with sulfamethizole in urinary tract infections³ are based on its remarkably high solubility in the urine over a wide pH range, virtually climinating the hazard of crystalluria; lowest degree of acetylation in urine; rapid and complete urinary excretion²... and broad-range usefulness, particularly in those patients sensitive to other sulfonamides.³ Sulfamethizole is effective against sulfonamide-sensitive organisms, including E. coli, streptococci, pneumococci, B. facculis, Gonococcus.

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References: I. Buckwatter, F. H., and Crouk, G. A.: Authbotic Med. & Clin. Ther. 3 (5.5-51) (Lin.) 1958, 2, Ood, A., and Farrar, G. E., Jr., eds.: The Depository of the United States of America. 25th Edition, Philadelphia, L. B. Lappenestr Co., 1955, p. 1881, 3, Commit on Pharmacy and Chemistry, J.A.M.A. 164, 971 (July 7) 1956,



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Continuing research has now led to the development of a new therapeutic surfactant with more than double the surfactant effectiveness of the original dioctyl sodium sulfosuccinate.

This new substance, calcium bis-(dioctyl sulfosuccinate), reduces interfacial tension to a minimal value at a concentration of only 0.035 per cent. A minimal value of this order in dynes per centimeter requires 0.1 per cent or more of the older dioctyl sodium sulfosuccinate.

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Dynes/cm.	Concentration				
55.0	0.00%				
13.3	0.01%				
9.9	0.02%				
8.4	0.03%				
7.4	0.035%				

Improved homogenization of the immiscible lipoid and aqueous phases of the intestinal content depends upon maximum reduction of interfacial tension. The greatest degree of fecal softening is achieved with surfactant agents capable of reducing interfacial tension to minimal values. Calcium bis-(dioctyl sulfosuccinate) represents a markedly more effective surfactant agent since maximum surfactancy results from less than half the concentration of previously used surfactants.

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DOXICAL 240 mg. SOFT GELATIN CAPSULES – for adults, one daily.

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1. Wilson, J. L., and Dickinson, D. G.: J.A.M.A. 158:261-263 (May 28) 1955. This new chemical, definitely superior in surfactant action, is indicated in the treatment of chronic constipation where non-laxative fecal softening therapy is the preferred regimen.

The usual adult dose is 240 mg. daily. For children and adults with minimum needs, 50 to 150 mg. daily may be given.

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 Batterman, R. C.; Grossman, A. J.; Mouratoff, G. J., and Leifer, P.: A Clinical Re-evaluation of Daytime Sedatives, Scientific Exhibit, Annual Meeting of A.M., San Francisco, Cal.; June 23-27, 1958.

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amount of water is used in either case. Sup: Ampuls of 6.25 Gm. and 12.5 Gm.

Pheny - Pas - Tebamin, The Purdue Frederick Co., New York, New York. For the control of active pulmonary tuberculosis. *Dose:* Chocolate-flavored powder, 1 level table-spoonful suspended in milk or water three times daily. Tablets, 8 taken with water, fruit juice, or milk three times daily. *Sup:* Powder, 1 tablespoonful of which is equivalent to 4 Gm. phenyl p-aminosalicylate, in packages of 1 lb., 5 lb., and 25 lb. Tablets, each containing 0.5 Gm. phenyl p-aminosalicylate, in bottles of 500, 5000, and 25,000.

Polaramine Syrup, Schering Corporation, Bloomfield, New Jersey. Aprimint-flavored syrup containing 2 mg. dextro-chlorpheniramine maleate per 5 cc. Indicated for the prevention and relief of a wide range of seasonal and nonseasonal allergies. *Dose:* Adults, 1 teaspoonful t.i.d. or q.i.d. Children under 12, ½ teaspoonful; infants, ¼ teaspoonful. *Sup:* Bottles of 16 oz.

Rautrax, E. B. Squibb & Sons, Division of Olin Mathieson Chemical Corp., New York, New York. Capsule-shaped tablets, each containing 50 mg. whole root rauwolfia serpentina, 400 mg. flumethiazide and 400 mg. potassium chloride. Indicated for all degrees of hypertension. *Dose:* As directed by physisician. *Sup:* Bottles of 100.

Tetravax, Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pennsylvania. Combination of four vaccines and toxoids to provide simultaneous immunization of infants and children against diphtheria, tetanus, pertussis, and poliomyelitis. Tetravax is prepared by combining alum precipitated, purified, diphtheria and tetanus toxoids and pertussis vaccine, with poliomyelitis vaccine. *Dose:* For maximum protection, three deep intramuscular injections of 1 cc. are recommended at monthly intervals with a fourth injection 6 to 12 months later. *Sup:* Vials of 9 cc.

Thio-Tepa, Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York. For certain neoplastic diseases. It has yielded consistent palliative results in adenocarcinoma of the breast and ovary, melanosarcoma, polycythemia vera, lymphosarcoma, Hodgkin's disease, chronic lymphatic and myelogenous leukemia. Most valued for palliative relief of local symptoms associated with neoplasm. *Dose:* Administered parenterally. Dosage must be carefully individualized. *Sup:* Powder form in 15 cc. vials.

Urevert, Baxter Laboratories, Inc., Morton Grove, Illinois. Intravenous combination of sterile, lyophilized, synthetic urea and an invert sugar solution. Indicated in the treatment of head injuries and in brain surgery, Urevert safely reduces increased intracranial pressure resulting from head injuries or brain tumors, thus facilitating treatment or surgery. Dose: Intravenously, as directed by physician. Sup: Unit consisting of one container of urea and one container of invert sugar solution.

Addendum: Lowila Cake, Westwood Pharmaceuticals. In listing the new formula in our May issue, we neglected to point out that the carton design had not be changed, either designwise or copywise. The new product is being distributed in the same carton used for the former product.

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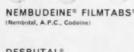


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Changing Concepts in Childhood Neurology

JOHN S. MEYER, M.D., Detroit, Michigan

linical investigation of neurological disorders in childhood is a field of unusual challenge. Many diseases of the nervous system occur before maturation of the brain and spinal cord is complete and for this reason, static lesions occurring at this time have a spurious appearance of progressive disorder. It is common experience, for example, for anoxic damage to cerebral cortex at birth to result in impaired intellectual performance noted for the first time at school-age. The explanation for apparent discrepancies between the time of brain injury and appearance of symptoms is that as the child grows older, greater intellectual and motor demands are made of an impaired cerebral cortex and the disability becomes correspondingly greater. In addition, emotional factors tend to confuse the clinical picture, since children suffering from brain damage are subject to emotional outbursts and parents are prone to reject or overprotect such children.

There are other considerations that complicate the evaluation of neurological disorders in children. The immature nervous system is particularly prone to brain swelling and seizures which commonly result from the metabolic changes accompanying infection, fever and degrees of trauma to the head, which would be considered trivial in the adult.

Research in the past few years has provided significant advances in pediatric neurology and many diseases previously considered "incurable" are now either preventable or curable by appropriate diagnosis and treatment. Poliomyelitis is now a preventable disease and it may be anticipated that other neurotropic virus diseases, including various forms of encephalitis, will be added to the list of preventable diseases. Antibiotic therapy is now available for the bacterial meningitides, including tuberculous meningitis, and therapy has become available in the past year for meningitis produced by the cryptococcus. In the past few months, we have successfully treated a patient with this type of meningitis using amphotericin B resulting in eradication both of the yeast and the inflammatory response in the cerebrospinal fluid. The patient has no residual neu-

Read at the Neurological Symposium. Children's Hospital of Michigan, May 22, 1958. From the Department of Neurology. Wayne State University. College of Medicine, the Detroit Receiving Hospital and the Children's Hospital of Michigan, Detroit.

rological changes. Less than twenty other case reports are available at present from other centers in which this drug has been used in this type of meningitis but it is generally agreed that this therapeutic agent is highly effective. 19

In the past five years surgical treatment of all types of hydrocephalus has improved remarkably and cerebrospinal fluid may now be diverted into the superior vena cava and right atrium in obstructive hydrocephalus by the use of mechanical valves. 11, 15, 16, 21 On the neurosurgical service of Wayne State University, College of Medicine, 15 hydrocephalic infants have been successfully treated using this technique.

It is the purpose of this paper to show, with illustrative case material, how a neurologist in pediatric practice is no longer a consultant with a dismal list of hopeless pronouncements, but now may prove himself to be of aid to the pediatrician in an understanding of the disturbed physiology of the nervous system, and whose advice in therapy and prognosis, as well as in diagnosis, may be of considerable value.

Migraine in Children

Although rare, migraine may begin in early childhood, we have recently examined two children in whom typical hemicrania appeared before the age of six years. In both, there was a strong family history of migraine and the possibility of brain tumor was considered; in one a pneumoencephalogram was performed before the correct diagnosis was reached. The other, Bruce G. was referred at the age of seven years because of severe, episodic, left-sided headaches of eighteen month's duration occurring at intervals of two or three weeks. For the six months before neurological consultation was sought, his headaches had increased in severity and were associated with nausea and gastric discomfort. The mother had suffered from migraine with scotomata for ten years and a maternal grandfather and three paternal aunts and uncles suffered from the same condition. Neurological examination and roentgenograms of the skull revealed no abnormality. The EEG showed minimal bursts of moderate amplitude theta activity which occasionally is seen in the

records of patients suffering from migraine. Treatment with caffein and small doses of ergotamine tartrate at the onset of attacks have afforded relief for the past six months.

Brain Swelling in Children

It is well-known that infants and children are particularly prone to disturbances of water and electrolyte balance because of small reserves of extracellular fluid compared to the adult. Fever, dehydration, water intoxication, and loss of electrolytes are commonly associated with states of stupor, coma and convulsions. Occasionally, in the presence of severe infection with high fever, stupor may be accompanied by moderate papilledema and meningismus. The cerebrospinal fluid pressure may be increased, but the fluid commonly is sterile and free of cells. This condition has long been recognized by neurologists and is termed "toxic encephalopathy." Rapid improvement results from reduction of body temperature, control of infection and replacement of serum electrolytes. The exact nature of its cause is not, as yet, well defined. Possibly, differences in the physical chemistry of immature myelin renders the brain more hydrophilic and prone to edema. Richard C., aged seven, well illustrates the problem of toxic encephalopathy. He was seen in neurological consultation because of convulsions and coma. Three days previously he had complained of sore throat, drowsiness and became irritable and anorexic. After a generalized seizure he was admitted to hospital where his temperature rose from 101° F. to 104° F. and he had a second generalized convulsion and remained comatose thereafter. Apart from coma, menigismus and pharyngitis, there were no other abnormal physical signs. Papilledema was not present, the tendon jerks were equally active and both plantar reflexes were extensor. Total white blood cell count was 13,900 (86% polymorphonuclear leucocytes). Urine examination showed no abnormality and the N.P.N. was 28 mgs. percent. Cerebrospinal fluid showed a pressure equivalent to 200 mm. of water and showed no cells or increase of protein. Treatment consisted of

icewater packs, intramuscular penicillin and the intravenous administration of 500 cu. mls. of isotonic saline followed by 1,000 cu. mls. of ten percent glucose over a period of twenty-four hours. At the completion of the intravenous infusion the child was sitting up in bed talking to his parents.

The differential diagnosis between acute traumatic brain swelling in children and acute subdural or epidural hematoma is not always easy and requires meticulous examination and observation. Baby Ruth N., aged two, was examined after falling from a swing and striking her head. There was no immediate loss of consciousness, the child getting up and crying lustily. In hospital, skull roentgenograms revealed a linear fracture of the outer table of the parietal area without displacement. The child then became irritable, drowsy and vomited. Neurological examination revealed nothing abnormal other than drowsiness and irritability. Cerebrospinal fluid pressure was equivalent to 190 mm. of water without cells or abnormal protein content. Fluids were withheld for twenty-four hours and 10 cc. of 50% glucose were injected intravenously. Vital signs, state of awareness and pupillary size were recorded on the chart every half hour for the first twenty-four hours. At the end of twentyfour hours observation, the child was once again alert and active and was allowed to resume her normal diet.

Brain Injury in Children

The term cerebral palsy literally means "brain weakness" and is scientifically unsatisfactory. 12 It is detrimental to our understanding of brain injury in infancy and childhood to use this term as an exact diagnosis. Attempts should be made to clarify the cerebral disorder more closely. It is well-known that brain damage in infancy and childhood has a host of causes including such diverse factors as intrauterine anoxia, infection, kernicterus, cerebral maldevelopment, and brain injury during or shortly after birth. Whenever possible both an etiological and clinical diagnosis of the type of neurological disorder should be made. By do-

TABLE I: CLINICAL CLASSIFICATION OF BRAIN INJURY IN CHILDHOOD

(Etiology to be determined whenever possible)

Simple Mental Retardation Congenital Word Deafness Spastic Diplegia. ** with or without athetosis Double Athetosis ** Dystonia Musculorum Deformans ** Infantile Hemiplegia. **

with or without athetosis

Cerebellar Ataxia

* Dementia should be noted when present.

ing so occasionally remediable conditions; such as, craniosynostosis and hydrocephalus are found to be concealed by the term "cerebral palsy." Unfortunately, an etiological diagnosis is not always possible, but in all cases the neurological deficit can be accurately defined. We have found the clinical classification shown in Table 1 useful.

In addition, occasionally children are encountered who do not have brain injury at all, but who are disabled by emotional maladjustment and who may be confused with the group of children suffering from brain injury. The subject of brain injury in childhood is of considerable importance and six cases have been selected which illustrate some of the problems that are commonly encountered.

David O., age six years, was doing poorly in school because he was unable to speak normally. The mother suffered from herpes zoster during the seventh month of pregnancy and severe pneumonia during the eighth month. David's birth was not unusual or difficult, but the child suffered from "draining ears" from age eight months to three years. Tonsillectomy and adenoidectomy were performed at two years-of-age.

Since the age of two years, his speech had been barely comprehensible because of difficulty in enunciating his consonants, particularly m, w, n, and t. His strange speech was understandable to his mother and younger brother. His sibling had learned these garbled words and

the two would converse in this strange language ("idioglossia").²⁴ In other respects David's development was normal. He was bright, alert, well-coordinated and although doing poorly, was learning slowly in second grade. Examination by an otologist showed normal hearing and audiometric tests. Psychological tests revealed that he had superior intelligence.

On examination, the child played normally and drew well with colored crayons. He printed well and correctly copied simple words and pictures. He was able to add "1 plus 2" and gave a good account of his family life. Speech was barely understandable because of garbled consonants. By mimicry, however, he could be taught to pronounce words correctly. The rest of the neurological examination was normal except that the left plantar reflex was extensor in type. It was concluded that he suffered from congenital word deafness, presumably due to bilateral temporal lobe injury in utero. Speech therapy, using visual mimicry, resulted in considerable improvement of his speech and adjustment in school.

Pauline A. was examined at the age of seven and a half years-of-age because of mental retardation. Intelligence tests revealed that her performance had not progressed beyond the four year level. Pauline was the second child of an Rh negative mother and Rh positive father. The third child required replacement transfusion at birth because of erythroblastosis. Pauline's birth was difficult and after she was born, an anesthesiologist had to be called to initiate breathing. She was also jaundiced and for several days after birth, her respirations were irregular and "jerky" in character. At four weeks of age the child was readmitted to hospital because of pneumonia with "collapse of the left lung." The child was given oxygen and taken to the operating room to remove mucous plugs in the bronchi. The family was warned that the child had suffered brain damage. The child had pneumonia repeatedly after this and at age one and one-half years she aspirated vomitus and was found in her crib "blue and clammy." Each time the child developed pneumonia she remained comatose for

several days. The child was slow in learning to walk and to talk. When she entered first grade it was noted that she had severe limitation of her attention span. In spite of tutoring she rapidly fell behind, developed temper tantrums and irritability. She was unable to learn to read or to recognize colors or numbers, but she had no spatial disorientation and was able to recall the shape of familiar objects.

On examination, the child was attractive; but constantly made tic-like facial grimaces. She was able to give her name, but could not recall her age. She could name the street where she lived, but not the name of her home town. She could not identify colors or digits and her copying of figures was poor. In other respects the neurological examination was normal. It was concluded that the child was suffering from mental deficiency due to kernicterus and anoxia with deficit in retention and partial visual agnosia. She was referred to a special school for mentally deficient children.

Terry H. was examined at age eleven years because of mental retardation and inability to read. He was attending special school and making little progress with third grade work. At the age of six months a diagnosis of cretinism was made and he had been treated with three or four grains of thyroid extract daily. The diagnosis was later confirmed after temporary withdrawal of thyroid.

On examination Terry gave a coherent account of himself and his activities. He was able to repeat six digits forward and four backward. He was unable to subtract seven from one hundred, but tests of recent memory showed no defect. He showed a distinct reading disability, reading "out" as "over" and "tongue" could not be read at all. His writing was normal, however. The rest of the neurological examination was normal. A diagnosis of mental deficiency secondary to treated hypothyroidism was made and special classes were advised in remedial reading.

Peter H., age eleven years, was referred because of slowness in learning. He was a student in a special school where he was unable to progress beyond second and third grade

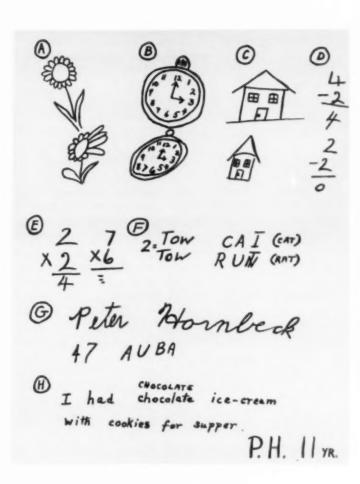


FIGURE 1. Samples of simple tests performed by an eleven year old boy suffering from mental retardation and mild pseudobulbar paresis. (A) The lower sketch is a fairly good copy of a daisy drawn by examiner, shown above. (B) Lower sketch is a welldrawn copy of the watch drawn above. (C) Copy of a house is a well-performed. (D) To show inability to perform simple subtraction. (E) To show inability to perform simple multiplication. (F) To show inability to spell "two" and "rat." (G) To show inability to write his address. (H) He was unable to read this sentence which he dictated.

work. The child was born after a difficult and prolonged forceps delivery. Prior to his birth the obstetrician had warned the family that a Cesarean section might be necessary because of dystocia. During infancy, Peter was prone to infections and had acute otitis media and pneumonia on numerous occasions. In the first grade he was a lethargic child who learned poorly and after repeating first grade several times he was referred to a school for retarded children.

On examination, the child sat passively without any spontaneous activity. His speech showed a labial and lingual dysarthria due to a mild pseudobulbar paresis. He could write his name, but little else (Figure 1).

He copied pictures quite well, but was un-

able to subtract two from four. He could multiply "two times two," but not multiply "seven times six." He was unable to spell "two" or "rat." He could not write his address and was unable to read his own dictated sentence, "I had chocolate ice-cream with cookies for supper." The family were told that the child suffered mental retardation due to birth injury and that in spite of special schooling his ability to learn would be limited.

Ray S. is a different problem which will be presented for purposes of contrast. He was five and one-half years-of-age when he was examined. He was referred because of poor work performance and poor behavior at kindergarten. He was the eldest of three children and the product of a short, easy labor requiring little

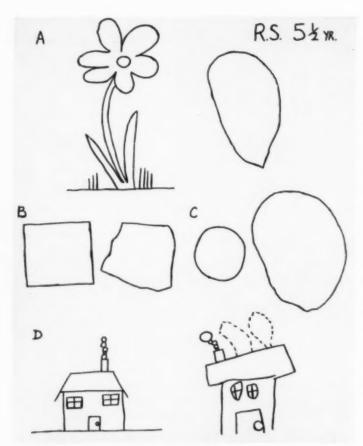


FIGURE 2. Sample drawings made by a 5½ year-old boy without brain damage, but with emotional and behavioral disorder. To show marked variability of his test performance depending on emotional status and motivation.

(A) The shapeless form to the right is his first attempt to copy the examiner's sketch of a daisy shown to the left. (B) His attempt to copy a square is shown to the right while he is being reassured. (C) His attempt to copy a circle shortly after the square. (D) After reassurance he draws the house, but when comments are made by the mother to "pay attention" he draws two shapeless chimneys shown by dotted line. After reassurance he erased these two attempts and drew the well executed chimney to the

anaesthetic. He was born at the seventh month of gestation and weighed 4 lbs. 7 ozs. at birth. For the first five days of life Ray was placed in an incubator, but after six weeks he was discharged and the family told the child was normal. He gained weight rapidly, and his developmental history was normal in all respects. In kindergarten, he was reported by the teacher as "the baby of the class, demanding of extra attention, a dawdler who plays by himself, and shuns the group activities." In other respects his performance was considered normal. The mother had been overly concerned since his birth that the child was mentally retarded and he had been examined by clinical psychologists three times, at age ten months, sixteen months and at five years. On each occasion his test

performance and intelligence quotient had been found to be average. At five years, his electroencephalogram was found to be normal. The mother agreed that the child was physically normal, but found him unusually demanding, "a thumb-sucker" and subject to nightmares. He would, for example, wake up at night and scream that insects were devouring him. The mother admitted to periods of both overprotection and rejection of the child and that the recent birth of two younger children had complicated the home situation further.

Neurological examination was entirely normal; but in performing tests of cortical function, an unusual observation came to light (Figure 2). His ability to copy designs showed a wide fluctuation in his performance depending on his motivation and encouragement by the examiner. It was concluded that Ray was suffering from behavioral disorder without brain damage and the family were referred for psychiatric advice.

Recently, we have studied a child with cerebral spastic diplegia and double athetosis who is presumed on purely clinical grounds to have a developmental defect of the corpus straitum and thalamus (status marmoratus). His case history is of unusual interest because it illustrates the deleterious effect of fever on the damaged brain and shows the close physiological relationship between athetosis and dystonia musculorum deformans.

Melbourne C. is nine years of age. He was referred to us for treatment of progressive involuntary movements of the arms of two years duration. The birth history was entirely normal; there were no instruments used and neither cyanosis or jaundice was noted. He weighed 6 lbs., 4 ozs. at birth, sat up at six months and walked at fifteen months. His gait was abnormal from the start and he appeared awkward and fell frequently. At two and one-half years he could not walk far and began to speak in a dysarthric manner.

When he was five years of age he was examined at another hospital where a diagnosis of cerebral palsy with spastic quadriplegia was made. At the age of seven, athetosis appeared in the arms for the first time. His family history was entirely normal. His sister, age five and both parents and other relatives are free of neurological disease.

On examination, no Kayser-Fleischer rings were noted on slit-lamp examination, but a number of neurological signs were present indicating damage to the corticospinal tracts and the basal ganglia. The child sat with the head flexed in a dystonic posture. The gait showed a mild "scissors" type of spastic diplegia. Speech was slow and spastic. There was continuous athetosis of both upper extremities and a tendency to pathological laughing and crying. Abnormal movements were not present in the face. Athetosis of the arms consisted of alternating movements involving flexion and exten-

sion of the fingers and wrist, a writhing supination and pronation of the hand, rhythmical flexion and extension of elbow and shoulders. An alternating grasp reflex followed by the avoiding reaction could be demonstrated. The feet were inverted and adducted and there was moderate adductor spasm of the legs. Tone in the upper extremities was hypotonic and spastic in the lower extremities. Motor strength was powerful, but fine movements were interrupted by athetosis. Dystonia was not present except in the neck. Tendon jerks were increased in the lower extremities with clonus and bilateral extensor plantar reflexes. Bone marrow aspiration showed no evidence of lipoid storage disease and lumbar puncture revealed no abnormality of the cerebrospinal fluid. Serum copper was within normal limits. EEG was also normal. A diagnosis of cerebral spastic diplegia with double athetosis was made and the patient treated with reserpine 4 mgs. daily without improvement. Therapy was then begun with 1-(-phenylcyclohexyl) piperidine, monohydrobromide* (Sernyl®) in doses of 2.5 mgs. thrice daily. The movements became greatly diminished, but at this dose he was lethargic and pain sensation was greatly diminished. The dose was reduced to 1.25 mgs. thrice daily and his movements were minimal. He was discharged home on this medication and remained free of involuntary movements for one month when he developed pharyngitis with fever and was readmitted to hospital with a clinical picture of dystonia musculorum deformans. He was withdrawn from all medication and treated with acetyl salievlic acid. His dystonia greatly improved to be replaced once again by athetosis at which time he developed measles and dystonia once again appeared. Thereafter, the movements steadily became worse over the next year together with pseudo bulbus palsy.

^{*} SERNYL or Cl. 195 is an experimental compound produced by Parke. Davis & Company which is still under clinical investigation. This drug surers a blocking action on the thalamus cortex and midbrain. Tools signs of impaired perception, mental confusion and ataxia are commonly seen. It is not recommended that it be used after than for investigative purposes at present.

TABLE 2: HEREDITARY ATAXIAS

Olivo-Ponto-Cerebellar Atrophy Cerebellar Atrophy Hereditary Spastic Paraplegia Friedreich's Ataxia Roussy-Levy Syndrome Peroneal Muscular Atrophy Familial Claw Hands and Feet Hypertrophic Interstitial Neuritis Refsum's Syndrome

Bilateral chemopallidectomy has arrested involuntary movements but he cannot walk.3

Resistance to Cerebral Anoxia in Children

The question arises how long the immature nervous system in man can tolerate anoxia without irreversible damage. It is probable that the newborn and infant brain is more resistant to anoxia than the adult brain. In the human adult it is generally conceded that cardiac arrest cannot be tolerated for longer than four minutes without irreversible brain damage. It appears that any resistance of the immature brain to anoxia is soon lost, however, for at the age of four years the critical period for cerebral anoxia is similar to that of the adult. We have recently examined a child aged four years who had suffered from cardiac arrest for seven minutes during a tonsillectomy. As a result of this brief episode of ischemic anoxia, the child remained totally decerebrate for two weeks at which time death supervened without any sign of neurological improvement.

Infantile and Juvenile Hemiplegia

Until the advent of arteriography, the pathogenesis of hemiplegia in infancy and childhood was obscure. Recently it has been shown that in addition to embolic occlusion, spontaneous thrombosis of the internal carotid artery may occur during infancy and childhood, probably due to congenital abnormality of the vessel wall. Rupture or thrombosis of intracranial aneurysms in children are rare, but occasionally occur. In a review of one hundred autopsied

cases, one ruptured aneurysm occurred in a child aged four years. The remainder occurred in individuals nineteen years or older. Rupture of an arteriovenous malformation of the brain is by far the commonest cause of infantile and juvenile hemiplegia, and in some cases these lesions have been resected successfully by the neurosurgeon.

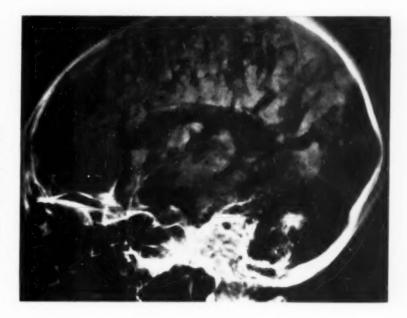
The Heredo-Familial Degenerative Diseases

The most significant contribution to this group of diseases has been the masterful clinical and pathological review by Greenfield entitled "The Spino-Cerebellar Degenerations." We have found the clinical classification of the hereditary ataxias shown in Table 2 useful particularly from the point of view of prognosis and in considering orthopedic procedure and rehabilitation.

These may be associated with blindness or dementia or both. My own clinical studies amplify the observations cited by Greenfield that there is a great deal of overlap between these clinical entities, so that they commonly present more as a mixture of neurological diseases. In addition sporadic instances of these syndromes are occasionally seen without family history of the disorder in spite of careful questioning and examination of the other members of the family. This observation may prove important to the biochemists to whom we look hopefully for the demonstration of a genetically determined metabolic disorder that may be common to many of these diseases.

Patients who show overlap between the various syndromes have been selected for discussion. We have investigated two instances of cerebellar atrophy on the neurological service of the Detroit Receiving Hospital and we agree with Graeme Robertson¹⁸ that this diagnosis can be established during life by careful clinical evaluation aided by pneumoencephalography.

Mary R., a negro female, was admitted at the age of thirty-two years for evaluation of progressive dysarthria, ataxia, dementia and seizures that first began at age ten years. By the age of twenty-eight years, her disability had progressed so that she was bed-ridden and re-



R. Pneumoencephalogram to show atrophy of cerebellum with greatly widened sulci outlining atrophic cerebellar folia. The fourth ventricle is enlarged without evidence of obstructive hydrocephalus.

quired feeding. The family denied similar symptoms among her relatives, but she had no brothers or sisters.

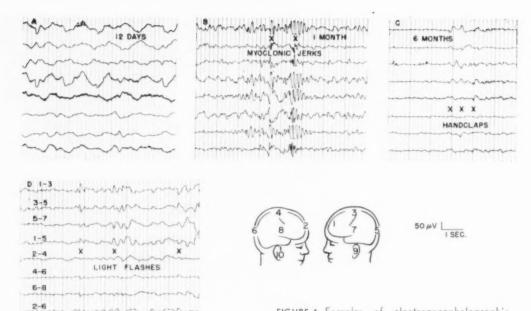
On examination her speech was incomprehensible because of severe cerebellar dysarthria. She was severely demented and could only indicate her basic needs. Kayser-Fleischer rings were not present. There was coarse titubation of the head and gross truncal and limbal ataxia without nystagmus. Her gait was grossly ataxic and she required support in the sitting position. Palatal nystagmus was not present. The tendon jerks were increased with bilateral clonus and both plantar reflexes were abnormal. Sensation was intact. The cerebrospinal fluid pressure was not increased and the fluid showed no abnormality of protein or cell content and the serological test for syphilis was negative. An EEG showed diffuse slowing in the theta range with occasional bifrontal spike activity. Pneumoencephalogram (Figure 3) showed marked atrophy of the cerebellum with greatly widened sulci outlining atrophic cerebellar folia. In addition, the fourth ventricle was enlarged without evidence of obstructive hydrocephalus.

Robert M., a twenty-eight-year-old negro,

was admitted for evaluation of ataxia, dysarthria and abnormal eye movements which began insidiously before the age of nineteen years and steadily progressed until the time of admission. In recent months he had become forgetful and was discharged from his employment as a machinist. Family history was negative.

On examination, there was gross ataxia of gait and slight titubation of the head. The ataxia was worsened on standing with the eyes closed. His speech showed cerebellar dysarthria and there was lateral nystagmus with weakness of upward gaze. There was cerebellar incoordination of the upper extremities with hypotonia. The tendon jerks were symmetrically increased with extensor plantar responses. Position and vibration sense were diminished in the lower extremities. There was kyphoscoliosis of the lumbar spine, but there was no clubbing of the feet. EEG and lumbar puncture showed no abnormality, but pneumoencephalogram showed enlargement of the fourth ventricle and atrophy of the cerebellum.

In both of these patients cortico-spinal tract degeneration and dementia were associated with severe cerebellar and probable brain stem de-



generation. In the first patient epilepsy was present, and in the second, dorsal column damage and kyphoscoliosis were present, signs characteristically seen in Friedreich's ataxia. In neither was there a family history, but olivoponto-cerebellar atrophy commonly occurs in the absence of family history of the disorder.

The following patient is of unusual interest because he is believed to represent an example of hereditary spastic paraplegia associated with peroneal muscular atrophy.

Hugh K. was first seen at age forty-eight because of difficulty in walking. At the age of five he began to have trouble with his gait because of bilateral foot drop. At age twelve there was wasting of his lower legs and an achilles tenotomy was performed. He was nicknamed "Frogs-legs" at school. Thereafter, his disease was mildly progressive until at the age of forty-five stiffness of the legs was marked. A paternal cousin had a similar neurological disease.

On examination the abnormal findings were confined to the motor and sensory systems. The gait showed spastic paraparesis with bilateral FIGURE 4. Samples of electroencephalographic records made on the twelfth day, on the fourth week and on the sixth month of symptoms proven to be due to herpes simplex encephalitis. (A) During coma present in the first two weeks asymmetric delta activity is present. (B) After one month, hand claps (marked by "x"s) caused myoclonic jerks and diffuse spike response with some rhythmical after-discharge. (C) At six months elements of myoclonus were still discernible both clinically and in the EEG response; although slow waves rather than spikes now appeared in response to hand claps. (D) At six months single light flashes with a photic stimulator also caused slow waves (with some triphasic waves).

foot-drop. There was atrophy of both legs below the mid-thigh. There was spasticity of hips, knees and ankles with clonus at knee and ankle. There was weakness of eversion and dorsiflexion of feet. The tendon jerks were all hyperactive and both plantar reflexes were extensor. There was a minimal loss of touch and pain over the lateral portion of both feet. Cerebellar signs were not present. Lumbar puncture with manometric test revealed no abnormality. The cerebrospinal fluid and roentgenograms of the spine were entirely normal.

Another patient of unusual interest appears

to be typical of Friedreich's ataxia associated with peroneal muscular atrophy, similar to cases reported by Spillane.²⁰

Lucille M. was examined at nineteen years of age and again one year later because of poor balance. Progressive ataxia began at age fourteen years. The family history was negative for neurological disorder.

On examination there was no scoliosis of the spine, but bilateral pes cavus was present. Her speech showed a cerebellar type of dysarthria. The gait was ataxic with bilateral foot drop. Romberg's test was positive. There was weakness of eversion and dorsiflexion of both feet. All tendon jerks were absent. There was diminished pain and touch over the outer aspect of both feet and position and vibratory sense were absent in the toes. Re-examination one year later showed essentially the same abnormalities except that the dysarthria, ataxia and Rombergism were more marked.

Through the kindness of Dr. A. Goldstein of Detroit, I have examined a patient of his with hypertrophic interstitial polyneuritis proven by nerve biopsy in which there was associated signs of posterior column degeneration and dementia.

There is no doubt, however, that many patients fall into the various clinical categories and the case of J. P. is highly typical of peroneal muscular atrophy. He is presented because his gait has been greatly improved by a bilateral, triple arthrodesis of the feet with anterior transplantation of the achilles tendon. J.P. first noted weak ankles at age thirteen years, when he noted clumsiness in walking and his ankles would turn inwards. At first, this disability was aided by orthopedic shoes, but the condition progressed and his symptoms recurred. His father and paternal grandfather suffer from a similar disability.

On examination there was marked weakness and wasting of the anterior tibial and peroneal muscle groups with wasting and foot drop. There was slight wasting and weakness of the long flexor muscles of the fingers. Romberg's sign was positive and all tendon jerks were absent. Vibration sense was diminished in the

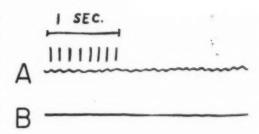


FIGURE 5. (A) Straight line drawn during timed interval by a 17-year-old boy with benign familial tremor which began at age 10 years. The strokes above drawn on record by the examiner indicate that the tremor has a rhythm of eight beats per second. (B) Line drawn at same speed by a normal individual.

fingers, absent in the feet and diminished at the knees. Position sense was poor in the toes. Pain and touch sensation were diminished to the midcalf. There were bilateral club feet. He was referred for orthopedic surgery and his gait has been much improved.

Blindness in Association with Hereditary Ataxias

Regarding the question of blindness in association with the hereditary ataxias, in the majority of patients in whom this occurs it appears to be due to a retrobulbar neuropathy allied to Leber's optic atrophy. In others, it is due to choreoretinitis and in two of our patients it was clearly due to retinitis pigmentosa with a history of progressive night blindness and the characteristic ophthalmoscopic findings found in this condition.

One of these patients suffered from a familial ataxic polyneuritis without enlargement of nerves (Refsum's Syndrome) 5.17 the other from a spino-cerebellar degeneration unlike Friedreich's ataxia. In reviewing the world literature on the question of blindness in these conditions, Greenfield mentions only four cases of retinitis pigmentosa associated with Friedreich's ataxia and these were reported by Franceschetti and Klein.6



FIGURE 6. Clinical photograph of an 8-yearold girl suffering from myotonia congenita to show true hypertrophy of the muscles of calves, thighs, shoulders and arms.

Metabolic Diseases of the Nervous System

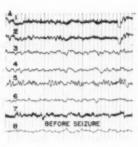
The recent work of Austin¹ has shown that in one of the demyelinating diseases of child-hood, namely, metachromatic leukencephal-opathy, the material staining metachromatically with toluidine blue is not only present in the degenerated white matter of the brain, but is present in the renal tubules, and may be demonstrated in the urine by staining the urinary sediment with toluidine blue. This has enabled the identification of this disorder for the first time in the living patient and makes possible biochemical investigations of the nature of the disorder.

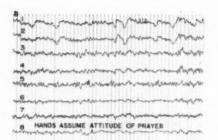
Clinical studies of Watson and Denny-Brown²³ have shown that in the juvenile forms of Tay-Sach's disease the neuronal lipoidosis results in abnormal excitability of nerve cells resulting in seizures and myoclonic epilepsy. They have clearly demonstrated that stimulussensitive myoclonus is a sign of diffuse neuronal disease and does not occur in diseases of white matter. I have had the opportunity of prolonged clinical and electroencephalographic studies of a child aged eight years who suffered from diffuse inclusion body encephalitis due to the virus of herpes simplex. She developed the rapid onset of coma with cerebrospinal fluid pleocytosis followed by a decorticate state with seizures and stimulus sensitive myoclonus.

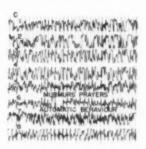
In this patient, acute and chronic phase sera showed an eight fold increase of antibody titer to herpes simplex virus. A similar case with brain biopsy probably showing herpes simplex inclusion bodies in nerve cells has been reported by Dodge. Samples of Serial EEG records were made at intervals of several months to show the development of stimulus sensitive myoclonus (Figure 4).

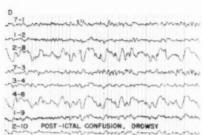
The recognition of Wilson's Disease as a familial disorder of copper metabolism associated with aminoaciduria has permitted the treatment of this condition with chelating agents such as B.A.L. and has greatly advanced our understanding of the biochemical background of one cause of dystonia and involuntary movement in children.^{5, 22}

Benign familial tremor occasionally begins in











50 MV L

childhood. I have seen two patients in whom the tremor began at age ten. In both there was a family history of a mildly progressive, nonincapacitating tremor of the hands and head. This is characteristically a rapid tremor of fine amplitude occurring at a rate of six to eight eycles per second. The tremor can be graphically recorded by having the patient draw a straight line with a pencil while the examiner times the performance with a stop watch (Figure 5). This record was made from a boy of seventeen with benign familial tremor whose tremor began at the age of ten. The tremor is worsened by stress, but does not impair fine work and he was able to perform satisfactorily in a course in mechanical drawing. His mother and paternal grandfather suffer from a similar condition of many years standing. In my experience this tremor responds well to long-term therapy with promazine or reserpine.

Myotonia is rarely seen in children, but gratifying therapeutic results may be obtained if the condition is recognized early. Two illustrative patients will be described, the first suffered from myotonia congenita, the second from dystrophia myotonica.

FIGURE 7. Samples of a continuous EEG record made before, during and after a right temporal lobe seizure in an eight year old girl suffering from a right temporoparietal cystic astrocytoma (grade ii). All records were made with scalp electrodes placed as shown in the diagram with reference to both ears (9 and 10) and ground. except record D which was recorded using bipolar technique. (A) Record prior to seizure shows flattening in the right occipital region and delta activity in the right temporal region. (B) During the record rhythmic bursts of low voltage sharp waves appeared in the right temporal lead and the child began placing her hands in an attitude of prayer, typical of the automatisms seen during her seizure. (C) Repetitive spikes arising from right temporal electrode are seen with disorganized spike activity from all leads. At this time the child was murmuring prayers and palpating the examiner's face and tie. (D) Bipolar record made during post-ictal state of drowsiness and confusion. High voltage delta activity is seen in the right temporal region.

Elizabeth G. was first seen at the age of eight years. At age five she complained of pain and stiffness of the thighs and calves on walking upstairs. She did not run as well as other children and complained that her legs became "tight." The child had always appeared clumsy and poorly coordinated. The mother had noticed that the child had unusually well-

developed muscles for her age, (Figure 6) particularly in her legs. Her appearance was quite different from her siblings who were more athletic, but had less bulky muscles. On two occasions she fell to the floor "stiff," her teacher called them "fainting spells" but the child denied this and said that her muscles "locked on her."

It was determined that her maternal grandfather and two cousins had a similar condition and in one of the cousins a diagnosis of myotonia had been made. Her sister age ten complained of muscle cramps and inability to skate well, but no myotonia was demonstrable.

On examination the child showed hypertrophy of all muscle groups of the legs and shoulders. The gastrocnemii were unusually firm on palpation. On arising from the lying position her movements were slow and the feet became fixed in spasm for several seconds. On grasping the examiner's hand the child was unable to release her grip for eight seconds. Rapid rhythmical movements were carried out with great slowness. There was percussion myotonia of the tongue, of the thenar muscles, of gastrocnemii, trapezii and quadriceps. Percussion myotonia of the thumb persisted for four to five seconds at room temperature, but was prolonged to seven seconds after immersing the hand in icewater.

The child has been treated for two years with quinine 0.3 grams twice daily and the myotonia has been abolished. It is assumed that the muscle hypertrophy is secondary to tonic contraction of the muscle fibers and observation so far with continued therapy for two years has shown no further hypertrophy of the muscles, but no evidence of decrease in muscle bulk

Dystrophia myotonica is correctly considered an hereditary disease of adult life, but occasionally the phenomenon of anticipation is seen and weakness and myotonia may appear as early as fourteen years of age. Phyllis B. is now thirty-nine years of age and is under treatment for weakness and stiffness of both arms and legs. Beginning at the age of fourteen she noted that her hands were weak and the muscles

went into spasm with use. Four years later her legs also became weak and she began to fall and have difficulty arising. At this time bilateral mature cataracts were noted and surgical removal of the left lens was performed. Her father suffered from dystrophia myotonica, but his muscle weakness began at the age of thirtyfive. On physical examination a mature cataract was present in the right eye with aphakia of the left eye. There were myopathic facies, myotonia of the hands, and legs with percussion myotonia of the tongue and thenar eminence. She was unable to relax the hand grip for five seconds after grasping the examiner's hands. There was a distal type of wasting of the muscles of the hands and forearm and of both legs below the knee.

There is little doubt that Phyllis B. is suffering from dystrophia myotonica with cataracts which is a well-known familial complication of this disease. Enteric coated quinine tablets have relieved her myotonia, but the muscular weakness is unchanged.

Seizures in Infancy and Childhood

As in adults, the pediatric neurologist must always be searching for those patients in whom seizures may be due to progressive space occupying and remediable lesions such as cerebral tumor or abscess. Gail T. was a striking example of such a problem. She was eight years old and for ten months had suffered from episodes of "staring;" this would be followed by the assumption of an attitude of prayer with an automatism of palpation of the face of those who sought to help her. There was no unconsciousness for she could obey commands, but was unable to speak during these attacks. She was treated with phenobarbital and the attacks decreased from twice daily to once weekly. Four months later frontal headaches occurred and she was admitted to hospital six months later when vomiting occurred. She showed severe papilledema with left homonymous hemianopia. Her electroencephalogram was recorded during a seizure (Figure 7). During the EEG she suddenly lifted her head, opened her eyes and her pupils dilated. She placed her hands in

prayer and began touching the face of her physician who was by her side during the test; she grasped his tie and wrapped it around his neck in repetitive, automatic movements. She would stop doing this on command, however. Suddenly she blinked, relaxed, became drowsy and was confused for one and a half hours after the seizure. At operation a right temporoparietal cystic astrocytoma (grade ii) was removed and she has been symptom free with good medical control of her seizures for a year since operation, although the hemanopia persists.

The vast preponderance of epilepsy in children, however, is strictly a medical problem in therapy. Apart from those patients whose disease is secondary to anoxia, infections, developmental, vascular and traumatic brain injury, there still remains a large group of children with petit mal and generalized seizures whose disorder is due to some genetically determined biochemical abnormality of the brain. It has been traditional to term these patients with a family history of convulsive disorder "idiopathic epilepsy" it is hoped that in the future, biochemical studies of cerebral metabolism will define the nature of these metabolic disorders. Symptomatic therapy in all forms of epilepsy continues to improve, however, in spite of an incomplete understanding of the nature of the disorder. Over eighty per cent of all patients with seizures can be adequately controlled with presently available forms of medical therapy and in the remainder the incidence of seizures can usually be improved.14 Recently Mysoline® and Milontin® have proved useful in the control of generalized and localized seizures and Celotin® is helpful in petit mal.2 The search for better drugs in the management of seizures must continue, however, until all cases of convulsive disorder can be controlled. We are presently investigating a new drug in the treatment of epilepsy which is chemically unrelated to the presently known anticonvulsant drugs. This drug, produced by Ciba Pharmaceutical Company, is alpha - (para-aminophenyl) - alpha - ethyl glutarimide and is named Elipten® by the manufacturers. In our experience this drug is useful in generalized

and localized convulsions as well as in status epilepticus. In addition, it is useful in the control of petit mal epilepsy and is of particular benefit in those cases where petit mal and generalized convulsions are combined. We have found it less useful in temporal lobe seizures.

The Unexpected in Pediatric Neurology

In many respects, pediatric neurology is such an undeveloped field that the neurological consultant is frequently confronted with the rare and unusual, thereby providing a constant stimulus to his interest. Jimmy R. is such a patient and is presented here because it is unlikely that an exactly similar series of events will ever occur again. He was seen in consultation at the age of fifteen and had been working during summer vacation as a caddy. He was on the golf course carrying on his back the golf bags of four players, one of whom was a physician, when a thunderstorm broke overhead. The group ran to a tree and Jimmy leant against it with his lumbosacral spine in close contact with the trunk of the tree and the steel shaft of a golf club protruding over the back of his head and neck. Suddenly a bolt of lightning struck the golf club and Jimmy collapsed to the ground toneless. The physician examined him and found him pale and apparently lifeless with both respiratory and cardiac arrest. Artificial respiration was given and the precordium was pounded by the physician, Within a minute the heart began to beat and after five minutes the respirations returned. The pulse and blood pressure were at first unobtainable; then the blood pressure rose after the first five minutes from 88 to 160 millimeters of mercury, later falling to his normal systolic blood pressure (110 mm.).

He regained consciousness after ten minutes (Figure 8) the hair was burned off the back of his head and neck and there were thermal burns of his buttocks, lumbar area and nose. On recovering consciousness his legs were numb and paralyzed but he could move his chest, arms and head. His hearing was decreased as though water were in his ears. After four

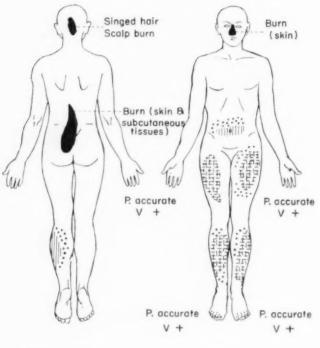


FIGURE 8. Chart to show sensory deficit noted in a 15-year-old boy 24 hours after he was struck in the head by a bolt of lightning which traversed his body from occiput to lumbo-sacral area. Black areas indicate thermal burns caused by the lightning. The sensory loss indicates damage to lower thoracic and lumbo-sacral nerve roots.



hours, strength in his legs began to return along with pain and partial return of sensation in the legs. He was examined neurologically twenty-four hours after being struck by lightning and he was ataxic and unable to walk a straight line. The Romberg sign was positive. There was weakness of quadriceps and ileopsoas muscles. The tendon jerks were absent in knees

and ankles and the plantar reflexes were normal. Pain and touch sensation were impaired as high as the tenth thoracic segment, but the sensory loss had a well-defined root distribution. It was concluded that he had suffered from thermal electrocution injury to the thoraco-lumbar nerve roots while the immediate cardiac and respiratory arrest were presumably due to effects (such as depolarization) of high voltage direct current on the medulla. He made rapid recovery and within one week there was no residual neurological deficit.

Summary

Concepts in childhood neurology must change as advances are made in the wider fields of medicine and surgery. Already many previously hopeless disorders are now amenable to therapy. Newer diagnostic techniques such as angiography, electroencephalography, and pneumoencephalography permit greater diagnostic precision than was available to the fathers of clinical neurology a few generations ago. The challenge still remains, however, of a vast group of neurological diseases which demand a more complete understanding which can only be obtained through cooperative endeavor of general practitioner, pediatrician and neurologist.

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Role of the Family Doctor in

This article on anesthetic deaths is addressed to physicians in general practice who do not, themselves, administer anesthetics. It may, at first, seem strange that the family doctor is important in the prevention of anesthetic deaths. We shall show later in the paper that the non-anesthetist, the physician in charge, does have an important part to play in the prevention of anesthetic deaths.

This article is written by men who formerly were in general practice, and who are now in the field of Anesthesiology. Through experience in each field, the important aspects of both can be merged.

Death in the Operating Room

First, however, we should clarify what is meant by anesthetic death. The term should not be applied in all instances when patients die under anesthesia, but only when the anesthetic causes the death. Anesthetic agents are poisons and are administered to patients in order to make surgical intervention possible. We know that these drugs are toxic, and we try to administer them in such a way as to minimize the harmful effects which they produce. When a patient dies in the operating room, we are always concerned as to whether or not the anesthetic agent caused or contributed to the death. The term "anesthetic

death" should be used if the anesthetic was the only factor involved in causing the death.

The term "cardiac arrest" has recently become popular and it is often applied when the patient dies in the operating room. This term has contributed only to confusion. Instead of clarifying the cause of death in an individual patient, it acts to combine all operating room deaths into one large group in which the only common factor is the location of the event. The term "cardiac arrest" merely signifies that the patient's heart has stopped. It gives no specific information as to the cause of the death, and may, in fact, conceal certain information which might otherwise be obtained. Some years ago, if a patient died without a known cause, the diagnosis of "status thymicolymphaticus" was frequently made. This diagnosis is no longer an acceptable one . "Cardiac arrest" is in the same category, being a non-specific statement which is not based upon, and does not contribute toward, an understanding of the responsible mechanism.

The term "cardiac arrest" should not be considered acceptable as a diagnosis or as a cause of death. In every instance when a patient dies in the operating room, an effort must be made to find the specific cause; an anatomical or physiological derangement of sufficient magnitude to be incompatible with life. It is the specific condition which should be stated as the cause of death.

Death in the operating room may be as-

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Preventing Anesthetic Deaths

cribed to one of several possible causes. A simple classification of causes of death in the operating room is: 1) hemorrhage, 2) shock, 3) basic disease, 4) vagal reflex, 5) anesthesia, and 6) combinations of these.

HEMORRHAGE. When death is caused by hemorrhage, there is usually little question as to the responsible factor. Rapid loss of blood is more harmful than the slow loss of an equal amount. The loss of a particular amount of blood may be fatal if hemorrhage is rapid, but it may cause only mild shock if it is slow.

The anesthetist may be of assistance in preventing death due to hemorrhage by the administration of blood transfusions. Blood should be administered to the patient as rapidly as it is lost, since the object is to replace and maintain the normal volume of fluid within the vascular system. In this respect, the anesthetist faces a problem different from that of the physician who administers blood for the treatment of anemia, and who is adding to the blood volume; this must be done slowly. In the operating room when blood is being lost and an effort is being made to maintain the blood volume, the rapid administration of blood may be life-saving.

SHOCK. Shock is rarely a cause of death in the operating room. In most instances, socalled surgical shock is actually caused by a combination of factors, of which blood loss is the most prominent. If the replacement of blood during the operation is adequate, very JAY J. JACOBY, M.D.
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few instances of death due to shock are seen. Vasopressor drugs and cortisone preparations may also help to prevent fatal shock in special instances.

BASIC DISEASE. Occasionally, a patient may die in the operating room as a consequence of a serious disease which exists before the surgical procedure is begun. The serious disease may be the reason for the operation, or it may be present in a patient who has an additional surgical condition. If the patient is known to have such a serious disease, and if his death occurs in the operating room without other obvious cause, it is reasonable to assume that the disease is responsible.

If the patient has had no signs or symptoms of serious disease, it is not reasonable to manufacture a later diagnosis of such conditions as myocarditis or coronary occlusion, unless the evidence of an autopsy indicates that such a condition is present. For this reason, an autopsy should be obtained on every patient who dies in the operating room. In many instances an otherwise unexplainable death may be found at autopsy to have an undiagnosed pathological lesion as the responsible factor.

VAGAL REFLEXES. During the course of

many operative procedures, the condition of the patient may be adversely affected by "vagal reflexes." In some instances, these reflexes have been considered as the responsible factor in the death of a patient. Experimental work has indicated that stimulation of the vagus nerve itself, by pinching or cutting or electrical current, is not responsible for serious cardiovascular difficulties.

ANESTHESIA. The administration of an anesthetic causes important changes in the two physiological systems which are most important for maintaining life, namely, the respiratory and circulatory systems. Life can be maintained only with the constant and uninterrupted provision of oxygen to the vital organs. The respiratory system is responsible for bringing atmospheric oxygen to and through the alveolar membrane; the circulatory system is responsible for bringing oxygen from the alveolar membrane to the vital organs. Should there be a breakdown in either one of these systems, death may ensue by failure to provide oxygen to the vital structures.

Anesthetics interfere with the function of the circulatory system by causing vasodilatation, and by decreasing the efficiency of the myocardium. In most instances, healthy persons show little effect, whereas very sick patients develop profound changes. Spinal, caudal, and epidural anesthesia reaching high levels cause profound hypotension, because the sympathetic supply to the blood vessels becomes paralyzed and the vessels dilate. General anesthetics also cause vasodilatation. As a result of vasodilatation a marked discrepancy develops between the volume of blood and the capacity of the vascular bed.

General anesthesia, very rapidly reaching deep levels, causes interference with myocardial efficiency, resulting in a form of speed shock. The faster the drug is given, and the deeper the plane of anesthesia, the more cardiac disturbance is created. The anesthetic agents which are administered by intravenous injection can be given far more rapidly than inhalation anesthetics, and therefore are more often responsible for speed shock. In addition, certain of

the drugs cause increased cardiac irritability, and predispose to the development of arrhythmias.

The effects of anesthetics on the respiratory system are seen far more often than those on the circulatory system. In every instance when a patient loses consciousness, whether this is due to anesthesia, poisoning, cerebral vascular accident, cerebral injury, or other causes, he also loses control of his respiratory mechanism so that obstruction of the respiratory passages may develop. The possibility of obstructed respiration is one which must be considered in every instance when a general anesthetic is administered. The most common causes of repiratory obstruction are: encroachment upon the air passages by the patient's tissues (tongue, epiglottis, vocal cords), and occlusion of the air passages by foreign material (blood, vomitus).

The anesthetic may interfere with respiration by causing depression of the respiratory center in the brain; almost every general anesthetic is a respiratory depressant. In addition, the auxiliary drugs commonly used in anesthesia today, that is, the muscle relaxants, act in such a way as to paralyze the muscles of respiration. As a result, even though he has a clear airway and his respiratory center is functioning properly, the patient may be unable to ventilate his lungs adequately, due to paralysis of the respiratory muscles. This may also develop when regional anesthesia is used.

In the absence of hemorrhage or of severe basic disease, most operating room deaths are probably related in some way to the anesthetic and are probably preventable. Recent surveys indicate that an anesthetic death takes place in one patient out of every thousand to two thousand anesthetics administered. Although we recognize that anesthetics are poisons and are always potentially dangerous, we believe that anesthetic deaths should be, and can be, greatly reduced in number. At The Ohio State University, in 54,000 patients receiving an anesthetic, only two patients had anesthetic deaths, a ratio of one in 27,000. Although this is far better than the national average, we believe

that the rate can be reduced further by scrupulous attention to details, by adequate preparation of patients, and by careful administration of the anesthesia.

Role of the Family Doctor

In view of all the technical discussion in the previous section regarding the possible causes of death in the operating room, the family doctor may feel that he has no role to play in preventing a catastrophe. Nothing could be farther from the truth. The family doctor should play a most important role in the prevention of operating room fatalities. His specific actions depend upon the local situation, but his influence should always be felt.

1. In no other area can the family doctor be so important in the prevention of anesthetic deaths as in the area related to vomiting. Almost one-half of all preventable anesthetic deaths are due to the aspiration of vomitus. By insisting that operations be delayed or that local anesthesia be used, the family doctor can eliminate the largest single cause of anesthetic deaths.

The family doctor should ascertain the time of the last intake of food and fluid before an emergency procedure is to be carried out. Under ordinary circumstances, the emptying time of the stomach is from two to three hours. If injury, illness, or labor pains occur while the stomach still has food or fluid within it. gastic activity is much reduced, and the stomach does not empty for a prolonged period. The relationship between the time of last food intake and the time of injury, therefore, is of great importance. If it is likely that the patient's stomach still contains food, the surgical intervention should be postponed if possible for several hours, or better still, until the following day. The use of an emetic or stomach tube does not eliminate the danger, because the stomach may not be completely emptied.

At one time, it was thought that fractures should be set immediately after they occurred. This is no longer considered to be a valid principle. Waiting twelve hours for the stomach to empty rarely influences the outcome in a

fracture case. Of what value is it to get a good anatomical result by immediate intervention following injury, if the patient becomes a cadaver?

If operative intervention is urgently necessary for a patient whose stomach contains food, it should be done under some form of local or regional anesthesia, so that the patient does not lose consciousness, and does not have the risk of aspirating vomitus.

If no way can be found to avoid giving the patient a general anesthetic, he should be protected against the danger of aspirating vomitus by the use of a cuffed endotracheal tube. This should be inserted, if possible, while the patient is awake, using topical anesthesia, or immediately following induction of general anesthesia. The endotracheal tube should be in place during the surgery, and it should not be removed until the patient has recovered his reflexes and is able to protect his respiratory tract against aspiration.

The obstetrical patient, is a particular example in the importance of this problem. During the last decade, maternal mortality has decreased in the important areas of infection, toxemia, and hemorrhage. It has not decreased in the area of anesthesia. On the contrary, the number and the proportion of deaths due to anesthesia have been increasing. The family doctor can do much to prevent anesthetic deaths in obstetrics by urging his patients, each time they visit his office, to avoid the intake of food or fluid any time after labor pains begin. He should also foster the use of regional anesthesia for these patients.

2. Another way in which the family doctor can help to prevent anesthetic deaths is to diminish the haste in getting the operation done. No matter how minor the surgical procedure may be, the anesthetic procedure is always a major one. The hazards involved in anesthesia are the same regardless of the type of operation. The idea that this is just a minor procedure and that the patient just needs a little bit of anesthesia often leads to neglect of proper precautions. There is no anesthetic which is so short or so minor that any of the

precautions should be overlooked.

The family doctor should exert his influence to slow down the proceedings and give the anesthetist time to gather together all of the equipment necessary to treat the complications should they arise. In particular, no anesthetic should ever be started unless the anesthetist has immediately at hand a suction machine which is in working order, a device for giving oxygen with positive pressure, and accessory devices used to maintain a free airway.

- Preoperative Preparation. The patient should be prepared for the operation as completely and as carefully as the exigencies of the situation allow.
- a. The family doctor should be in contact with the surgeon and the anesthetist, and should inform them of all the pecularities of the patient so well known to him, but unknown to the specialists who see the patient for only a short time before the operation. He should inform the surgeon and the anesthetist regarding the patient's cardiac and respiratory status, allergies, endocrine balance, intemperance of habits, previous serious illnesses and anesthetics, and important drugs used in the past or present in the treatment of the patient. The family doctor should inform the surgeon and the anesthetist of any peculiar reactions which the patient may have to drugs, both as to dosage sensitivity and as to allergic, physical and psychological aberrations which may result.
- b. Psychological Preparation. Many patients have more confidence in their family doctor than in any specialists, regardless of their reputation. The family doctor should prepare the patient psychologically by assuring him that he has the best surgical team to correct his difficulty, and by also assuring him that the outcome will be satisfactory. This need not be taken as a guarantee of results. After the pros and cons of the operative procedure have been discussed with the patient and his family, and the decision has been made to operate, the family doctor should have the patient cast aside all doubts. The patient should not go to surgery with the realization that everyone is doubtful as to the outcome.

Psychological preparation of the patient is more important than the use of drugs in allaying fear. Fear in itself produces undesirable reactions in the patient, with increases of adrenalin output, agitation, metabolic rate, and need for anesthetic drugs. That fear in itself may be harmful is well known from the fact that some people may even die of fright. A patient coming to the operating room should be in a tranquil state, and this is arrived at more by reassurance by a trusted family doctor than by the administration of tranquillizing drugs.

Through gossip, or former experiences of their own, patients often develop a preference for one type of anesthetic, and aversion for another. The family doctor should instruct the patient that the choice of anesthetic is to be made by the anesthetist, who must consider many factors. Since the anesthetist is usually a stranger, he may have difficulty in obtaining the confidence of the patient. The family doctor can do a great deal to promote favorable relations between the anesthetist and the patient.

- c. Physical Preparation. The family doctor should be sure that the patient has been prepared for surgery as fully as possible, both in regard to the condition which requires surgery and with regard to all other medical problems which the patient may have. The family doctor should see to it that any drugs which the patient has been taking for maintenance of good health outside the hospital are continued after he is admitted. These include such drugs as digitalis, diuretics, aminophyllin, bronchodilators, cortisone, insulin, thyroid, nitroglycerin, antihypertensives, anticonvulsives, etc. It often happens that when a patient is admitted to a hospital, he is deprived of the drugs which he usually takes, but similar drugs are not ordered by the intern or resident.
- d. The family doctor should see to it that pertinent diagnostic studies are carried out as indicated. These include electrocardiography, roentgenography, metabolic rate, respiratory function, blood volume, and plasma electrolytes, in addition to the routine studies of blood and urine. He should also see to it that any abnormalities revealed by these studies are cor-

rected before the patient is brought to surgery.

e. If the patient has had therapy with corticosteroids within the previous six months, the family doctor should again prescribe corticosteroids in preparation for the operation. Depression of adrenal hormone production exists for several months after cortisone therapy has been discontinued, and the patient may more easily go into shock. The stress phenomena related to surgery requires that support with cortisone be given for two or three days before operation and extended for several days after the operation has been completed.

f. The family doctor can often give very pertinent advice with regard to preoperative sedation. He has probably had occasion in the past to administer to the patient some narcotic or sedative drugs, and he can best evaluate the degree of sedation which the patient is likely to obtain from a given dose.

4. During Operation. If the family doctor comes to the operating room, his presence frequently exerts a great calming influence on the patient. He may assist both the surgeon and the anesthetist as an advisor. Occasionally, the family doctor will make the important decision as to whether a major or minor surgical procedure should be carried out for a given disease. He may also assist the anesthetist in the interpretation of cardiac irregularities if they should arise. He will be able to observe the seriousness of the operation, blood loss, fluid replacement, etc., and have a better basis for postoperative care.

5. Postoperative Period. After the patient has been brought back from the operating room, the most important hazard is that of interference with the integrity of the respiratory system. Obstruction is potentially present until the patient is thoroughly conscious; he must be constantly watched by a capable individual to be sure that he has a clear airway. The possibility of respiratory obstruction in the immediate postoperative period is just as great, if not greater, than it is during the operation itself. Indeed, the likelihood of regurgitation of gastric contents is greater as the patient emerges from surgical anesthesia, and passes

through the stage of stimulation of the vomiting center.

Whether the patient is brought from the operating room to the recovery room, or to his own room, the family doctor should see to it that a capable individual is watching the patient's breathing. So often one sees the patient placed in bed and left to the care of the ward nurse. She is generally busy, and if the patient is quiet she looks in occasionally but spends her time with more demanding patients, Even if she remains with him, the nurse usually considers it most important to take and record the patient's pulse and blood pressure since these seem to be the items in which the doctors are most interested. She does not realize that the pulse and blood pressure are definitely secondary to the maintenance of an adequate volume of respiratory exchange.

Depression of respiration is a continuing hazard. The drugs given to the patient for premedication and for anesthesia are usually respiratory depressants. The effects of anesthetics, narcotics, and sedatives upon the respiratory center are at least partially counteracted
by the surgical stimulus. Since the surgical
stimulus is no longer present, the depression
of respiration may be even greater in the immediate postoperative period than it had been
during the operation itself.

In this regard, the family doctor has a most important duty. Patients who have just awakened or who have partially awakened from general anesthetics frequently moan and groan, cry out loud, and thrash about in bed. The tendency is to give the patient a dose of narcotic at this time; the usual dose is morphine 1/4 grain, or Demerol, # 100 milligrams. The patient thrashing about in the immediate postoperative period is often a victim of chronic hypoxia, and no narcotic should be given until one is certain that chronic hypoxia has been eliminated. In addition, the patient is unusually susceptible to the effects of narcotic drugs. The administration of the usual dose of narcotic may cause the patient to lapse back into unconsciousness with the attending dangers of respiratory obstruction and depression. The first

dose of narcotic in the postoperative period should be no more than a quarter of the ordinary dose for that patient.

If muscle relaxant drugs are used during the operation, there is a potential danger of increasing respiratory paralysis in the immediate postoperative period. This is particularly true if a large amount of curare has been given to the patient during the operation, and counteracted with Tensilon.® The duration of action of Tensilon is less than that of curare, so that the antagonistic effect of Tensilon may disappear while the muscle paralyzing effect of curare is still present. It sometimes happens, therefore, that progressive respiratory paralysis develops in the immediate postoperative period. This may be counteracted by repeated administration of Tensilon or prostigmine and artificial respiration with oxygen if necessary.

Hypotension in the immediate postoperative period is often due to "cyclopropane shock." This condition may occur within the first fifteen minutes after the anesthetic has been discontinued. It may occur after anesthetics other than Cyclopropane, especially if a closed breathing system is used. It is characterized by hypotension without any of the other signs or symptoms of hemorrhagic or traumatic shock. The pulse is unusually slow and the patient's color is good, the skin is warm, and respirations are satisfactory.

"Cyclopropane shock" is usually of no great

importance although it may be a matter of great concern. Unless the blood pressure drops to very low levels and remains there. Cyclopropane shock ordinarily requires no treatment. If the hypotension is serious or lasts for a prolonged period, it may be treated by the intravenous administration of very small quantities of vasopressor drugs.

The most important factors in Cyclopropane shock are prevention and differential diagnosis. It may be prevented usually by adequate pulmonary ventilation during the course of the operation. For differential diagnosis, the physician should be aware that the condition may exist. The mere fact that the patient develops hypotension in the immediate postoperative period should not be construed as a sign of internal hemorrhage, and should not be considered an indication for the administration of blood transfusions.

On the other hand, the occurrence of hypotension in the immediate postoperative period should not always be regarded as Cyclopropane shock. It may be due to continued bleeding, or hypovolemia, or other cardiovascular difficulties.

These particular items are pointed out as factors of immediate and major importance, which are frequently overlooked. There is no intention of minimizing the other important postoperative problems, which generally are satisfactorily managed.

Summary

Anesthetic deaths occur too often. The family doctor can help to prevent such anesthetic deaths by providing the operating team with the benefit of his knowledge of the patient, including diseases which he has had, medications which he ordinarily takes, and medications to which he responds in an unusual manner. The family doctor can do much to help in preparing the patient so that his physical condition and mental attitude are optimal before he comes to surgery. The family doctor can also do much in assuring that the patient comes to the operating room with an empty stomach; this alone

would cause a substantial lowering of the anesthetic mortality rate. He should also see to it that the anesthetic procedure is not begun until the anesthetist has had a chance to gather and to test all of the equipment which might be needed in the event that complications arise. In the postoperative period, the family doctor also has a function in preventing death due to respiratory difficulty, and in differential diagnosis and treatment of circulatory problems.

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The Child's Trip

to the Operating Room

It seems hopelessly trite to say that little children need special care when they come to the operating room. This is vaguely recognized by all of us, and in certain phases of the problem a great amount of progress has been made. The technical methods of administering anesthesia to children have become highly developed and have brought us excellent results. Another phase of pediatric anesthesia, that of handling the children as human beings, has seen less progress and in many hospitals is still in the dark ages. In many instances, we have chosen to ignore what children are really like, and have become entangled in a mass of cruel procedures, stilted approaches, and artificial devices. This article will remind the reader of some characteristics of children from one year to eight years and will suggest methods of handling them with ease, preoperatively and through induction of anesthesia.

For our purposes children can be divided into two groups, the dividing line being about the age of three. The same basic principles apply to both groups, but children from one to three require a slightly different method of handling. Those above the age of three are seen in surgery more often, and will be considered first.

Children from three to eight are delightful creatures, although your wife might not agree at the end of a long day. They have alert, perJAMES A. FELTS, M.D. Marion, Illinois

ceptive minds, which understand much more than we suspect. They are skilled analysts of personalities and motives, and can sense insincerity immediately. Deception, or a broken promise, will turn them away and bar any further friendly approach. They are almost sadistic in their play, but their relations with adults are open, and on a basis of trust.

We have an advantage over them in that we can overpower them and force them to do our will. Anesthesia can be induced in this manner, although no humane person does it by choice. We are just as guilty of going too far in the other direction, however, in our attempts to be very psychological about the whole thing. We seemingly feel that if three people comment on what pretty big blue eyes he or she has, and if we inquire as to whether the dolly is going to have its tonsils out too, then the child can be sold anything and can be rushed smoothly into anesthesia. It won't work: the child sees through the method immediately, and anyone who has tried to get a child ready for Sunday School knows that he won't rush into anything, especially in surroundings of pandemonium.

Consider it from the child's side. In a typical situation he is hustled into the operating suite, and in the corridor two nurses start gurgling about what a cute child he is. He is not frightened at the caps and masks, because he has seen them on television. He is, however, very suspicious of the insincere flattery, and suspects that he is being sold the childhood equivalent of the Brooklyn Bridge. He is then wheeled into the operating room and placed on the table, rather abruptly. In the corner the instrument nurse is rattling retractors and droping pans, which sounds very much like clanking chains and trap doors. The surgeons are paddling around in the scrub sink, telling dirty jokes or lying about their incomes in loud, very, heavy voices. These are not the kindly, sympathetic doctors the child remembers, but are behaving more like heavies on a television westtern. Two nurses suddenly descend on the child, who by now realizes that he has fallen into a den of monsters. One remarks in a loud, shrill voice, about what beautiful eyes he has, as she leans on his legs. Another assures him that this won't be bad, she just wants to hold his wrists. The anesthetist tells him that everything will be fine, just breathe this in. At that point the child panics, and tries to leave. He loses, of course, and is crushed, terrified, into sleep. From then on, he will distrust anyone connected with medicine. He can hardly be blamed.

The procedure can be handled properly, with very little unpleasantness for the patient. The amount of extra time and effort is almost nil: the principal change is the adoption of a sensible and humane attitude. With correct management, the dividends are great: anesthetics are smoother, the young patients get along better postoperatively, and are quite willing to come back later for a fracture or appendectomy.

Smooth induction of anesthesia in children requires both technical skill and a knowledge of what goes on in their minds. For consistently good results, an early start is required. Several weeks before the operation, the child should be told why he is going to the hospital, why the operation is necessary, and what will

be done. Untruths are neither helpful nor desirable. A frank, truthful approach is the best. The three-to-eight age group will be amazingly adult about it, if given a chance. The young patient should be told about the operation far enough in advance that he will have time to think about it and discuss it with his playmates. If you have never eaves-dropped on a group of children discussing their operations. do so: it is a revelation.

Children seem to be much better prepared for surgery and anesthesia now, than they were ten years ago. It is rare now to find a sadistic mother who horrifies her child with tales of surgical tragedies, or threatens to call the doctor to give him a shot if he misbehaves. Children are wiser, too, and through television have become quite familiar with hospitals. The boys seem to be curious about the anesthesia machine and the contents of the tanks (they all know that the green ones are full of oxygen), but caps, masks, big lights, and instruments are all old friends to them. They have seen it all on television and need little instruction. Subjects which must be covered are: what the operation will correct; where the incision will be; what will be done after the operation, when it is a staged procedure; how long the hospital stay will be; the fact that there will be injections, and the fact that the child will probably go to sleep by breathing through a mask.

The very young child, from one to three, presents a different problem of approach and management. This is not a reasoning animal, and explanations will probably be lost. Memory and attention span in this age group is such that coaching will be of little avail. They should be told the purpose of the hospital trip, and what will be done, but cooperation in the operating room can usually not be expected.

The most peaceful method in the one to three group is one whereby the child arrives in the opertaing room asleep. Rectal Pentothal.* 15 mgms. per pound, a rectal suppository of Nembutal.* 30 mgms. or Phenergan.* 25 mgms. works well. Narcotic and drying agents should have been given as usual, in a dosage based on weight. If tranquilizers, such as Phenergan or

Chlorpromazine, are used, the narcotic dosage should be halved. With a child under such hypnosis as this, anesthesia induction can usually be "sneaked" with a high flow of nitrous oxide or Cyclopropane, the mask not actually touching his face. One can then switch to a favorite agent and technique. The main requirement is to have the child fall asleep in bed, and hope that the state is maintained until induction of anesthesia. With a quiet environment, good sedation, and a sneak-type induction, the very young child probably will not remember his trip to the operating room, and will have no bad memories.

These methods can be used in the older group, but are usually not necessary. Such techniques add additional depressing drugs and are probably more wisely used in the group in which they are needed most: the very young and the extremely nervous child. Rectal Pentothal also requires that the anesthesiologist stay with the child in the room, with resuscitative equipment at hand. In the understaffed hospital, this is difficult to manage during a busy schedule.

The child should be seen the night before surgery by the anesthetist who will handle the case. He should be told in a calm, natural way just what will be done when he reaches the operating room. He should know about what odors he can expect. Promises should not be made, unless they can be kept. If Cyclopropane is used for induction, the child can be promised that it does not have a bad odor, and that if he will take two breaths, he will go to sleep. The idea is very attractive to them, and they usually cooperate. Children seem to worry about the fact that the operation might start before they are asleep. They should be reassured on this point, and can also be told that when they wake up, everything will be finished and they will be in the recovery room or their own room. The approach should be one of sincere, sympathetic explanation, rather than salesmanship. With the latter, they will suspect that the merchandise is faulty and that they are being deceived in some way.

Premedication is of paramount importance.

Obviously, a sleepy, tranquil child is easier to handle than one who is not. There must be thousands of different routines for premedicating children, probably one for each practicing anesthetist. Two points would seem to be undebatable. The child must be given enough to be effective, and it must be given soon enough, forty-five minutes before anesthesia. In some hospitals, children are given homeopathic doses a few minutes before they leave the room, and then there is a great wonderment at the fact that the child is sitting up on the cart, screaming, or that he fills up with secretions after anesthesia is started. There seems to be a widespread view that children do not tolerate narcotics as well as adults, when actually the reverse is true. Their metabolic rate is much higher than ours, and they need more, per pound of weight.

Many drugs have been used for pediatric premedication: tranquilizers, antihistamines, banthine, barbiturates, and the full list of narcotics. As in all of medicine, the individual physician should use the agent which works well in his hands. I have always felt that simplicity is very desirable in pediatric anesthesia. and I would recommend a fair trial with two very ancient and honored drugs: morphine and scopolamine. They are tried and true, have few side effects, and we know what they will do. The same cannot be said of tranquilizers. In the absence of tranquilizers, I have used a dosage based on morphine 1/4 gr. (15 mg.) for 120 lbs. Scopolamine should be given in a 1:25 ratio. Premedication for a child of 40 lbs. would be morphine 1/12 (5.0 mg.) and scopolamine 1/300 (.2 mg.), and for a 60 lbs. child, morphine 1/8 (7.5 mg.) and scopolamine 1/200 (.3 mg.). These amounts should be given a full forty-five minutes prior to anesthesia.

At first glance, the dosage seems excessive, but results with it have been excellent. The children are well sedated, but almost never too depressed. One must remember that these are active children with high metabolic rates, who in normal play can wear an adult down to exhaustion.

The schedule is easy to calculate and does not require charts or slide rules. If your hospital does not use pre-mixed narcotic solutions, you will be more popular with the floor nurses if the dose is approximated to the nearest even division of 1/4 or 1/6, avoiding odd fractions such as 1/10.

I would heartily recommend scopolamine, in preference to atropine. It is a much better drying agent, a good sedative in itself, and an excellent amnesic. A surprising number of children premedicated with scopolamine remember nothing of their trip to the operating room. They wake up wondering when they are going to surgery, and are surprised to find that it is all over.

When the child is taken to surgery, he should be brought to a quiet operating room. The surgeons should be discouraged from any further examinations, and should be maneuvered into the hall to discuss the stock market. The door should be closed, lest some renegade should burst into the operating suite to announce the latest golf score in a loud voice. The scrub nurse should be ready and quietly waiting. The anesthetist should be ready, and should not need to run out to look for something.

One person and one person only should talk to the child: the anesthesiologist or anesthetist. The talk should be in quiet, relaxed tones. The child should be reminded of the things to be done, and should be shown the apparatus. The orderly and circulating nurse should stand quietly by, and should not talk to the child or touch him except to move him from the cart

to the table. If there should be an excitement stage, there is time then to restrain the patient but not before. Anesthesia can now be induced. If the child has been properly premedicated, if he has been handled sincerely and gently, and if an atmosphere of quiet has been maintained, induction will be smooth and uneventful, less anesthesia will be required, recovery will be more placid, and the child will not have had an unpleasant experience. He will not be afraid of hospitals and doctors, and will be quite willing to return.

During the time I have practiced anesthesiology, I have tried many games and fairy tales with children, as a means of inducing anesthesia. They have been taken on airplane rides, train rides, and the like. I abandoned such techniques before the space age, so I cannot speak with authority about space helmets. I discovered that these methods work in some children the first time they are used, provided one doesn't get mixed up while telling the story. After the game has been used once, the child realizes he has been fooled, doesn't trust the anesthetist, and may be hard to manage. Children are very honest and direct in their own approach, and honesty will serve the purpose best in the long run.

The key requirements for making a child's trip to surgery peaceful and not unpleasant are: an honest, gentle approach to the child, good premedication, and a quiet environment: easy things to accomplish, and paying great dividends.

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Hearing Problems in Later Life

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According to recent population estimates there are more than fourteen million people in the United States who are over sixty-five years of age. By 1975 the figure is expected to reach twenty-one million. These considerations alone emphasize the necessity of the recent surge of interest in the problems of the aged. The steady increase, both relative and absolute, in the number of people living to advanced age is apparently a phenomenon common to all western countries.

Two factors generally associated with the mounting proportion of the aged in relation to the total population are first, the decrease in the birth rate dating from about the last quarter of the nineteenth century and second, the decline in the mortality rate. The former, according to Sheldon²⁸ has created the 'classical bulge' in the population curve, while the latter functions by continually adding to the already existing upper age segment. Sheldon further maintains that although recent medical therapeutic treatment has contributed to phenomenon, its weight has been popularly exaggerated.

A critical aspect of the problem of aging pertains to a consideration of the age level at which the individual begins the shift from a contributor to a debtor in society. It would appear that the transitional period at present encompasses the age range seventy to seventy-nve. Before age seventy the majority is still in the mature roll of giver. After age seventy-five the pendulum swings rapidly in the opposite direction, the individual thus finding himself in the immature roll of receiver. The psychological implications inherent in the transition are numerous and complex. Gard¹⁴ has recently presented a detailed discussion of the problem to which the reader is referred.

Two important requirements for maintaining vigor in later life, and hence, a measure of independence and its corollary, emotional stability, pertain to the bolstering of failing vision and hearing. Sheldon²⁸ has stated that more than ninety percent of old people require spectacles. It is rather well established that hearing ability deteriorates with age. Saltzman²¹ however, has estimated that less than ten percent of the aged have handicapped hearing losses. Assuming that the number of individuals over sixty-five who suffer handicapping hearing losses lies somewhere between five and ten percent, it seems likely that the total in this coun-

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try is approximately one million. A discussion of the auditory problems of the aged would therefore appear to be pertinent at this time. Since the family physician is by and large the first to be consulted either by patient or the family of the patient when hypacusis is noted, the purpose of the paper is: First, to discuss the salient features of old age hearing loss. Second, to report the results of a study of old age hearing loss recently completed in our clinic and Third, to illustrate some of our current research relative to the problem.

Features of Old Age Hearing Loss

LESSENED ACUITY. Decreased sensitivity for perception of high frequency sounds, as a general rule a concomitant of advancing age, has been recognized since the latter part of the nineteenth century.²⁴ It was not however, until after the development of the pure tone vacuum tube audiometer that the locus and degree of lessened auditory acuity could be precisely determined. Thus Bunch^{6, 2} in 1929 and 1931 presented data relative to the average hearing loss which is to be expected with increasing age. Later studies by Steinberg et al.²⁹ and Webster et al.³² provided confirmation of Bunch's earlier findings.

As a result of the above noted investigations the American Standards Association in 1954 published average hearing loss curves for men and women to be expected with age. The curves were based upon the data of Bunch, Steinberg et al.29 and Webster et al.,32 and encompassed the age range twenty-five to sixtyfive years inclusive for frequencies 500, 1000, 2000, 3000, and 4000, cps. More recently, Glorig. has reported average presbyacousic curves for both sexes computed from the 1954 Wisconsin State Fair Hearing Survey data.2 The age range covered by the curves is identical to that of the American Standards Association. With regard to the test tones, average loss at the aforementioned frequencies plus 6000 cps were reported. Although there are some differences relative to degree of loss with age between the American Standards Association curves and those of the Wisconsin Survey as published by Glorig, nevertheless, both sets of data show progressively declining sensitivity for high frequency sounds with increasing age.

Unfortunately, none of the large scale investigations published curves for hearing acuity beyond age sixty-five. It would appear however, from the literature that age per se after sixty-five years is not definitely related to hearing loss. Recently, Sataloff and Menduke²² studied hearing acuity in men and women through the age range sixty-four to ninety-one years. They obtained a low correlation between degree of hearing loss and age, and reported that little additional hearing loss occurs after age sixty-five. They stressed the need for longitudinal studies in this respect before definite conclusions could be drawn.

THE PROBLEM OF DISCRIMINATION. Although hearing acuity for pure tones is frequently utilized as a general index of one's auditory capacity, nevertheless there is another major aspect of hearing which should be taken into consideration in addition to tonal hypacusis. Specifically, how clear or intelligible is speech to the individual once his acuity loss has been surmounted through amplication, or simply speaking louder? This dimension of hearing is usually referred to as discrimination ability for speech. It is a well established clinical observation that individuals with identical hearing losses for pure tone may vary widely in their ability to understand speech once their hearing loss has been overcome by means of a hearing aid. In the same vein, definitely handicapping acuity hearing losses as a result of presbyacousia are often characterized by abnormally poor discrimination or ability to hear speech clearly which is out of proportion to what is expected from their degree of loss for pure tones. Pestalozza and Shore20 investigated various parameters of hearing in one hundred and eighty-five selected subjects for the age range sixty-five to ninety who had consulted a hearing clinic for help because of handicapping hearing loss. Using the recorded Harvard pho-

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netically balanced word lists, they found discrimination to be poor in their subjects. Discrimination tended to deteriorate as hearing loss increased. There was however, no significant relationship between the slope of the air conduction pure tone audiogram and discrimination loss. When a group of their old subjects (sixty-five to ninety years), was matched with a group of young subjects (less than forty) on the basis of pure tone audiogram, the latter manifested better discrimination. In addition, Pestalozza and Shore found poor discrimination for subjects whose average tonal loss through the speech frequencies did not exceed twenty decibels. The results provided supporting evidence for Gaeth's12 concept of phonemic regression in old age, and suggested a nonperipheral basis for the discrimination disability.

Within the last decade Schuknecht and associates²⁴⁻²⁷ have carried out a series of experimental studies on animals which have contributed immensely to the understanding of hearing impairment, with implications relative to discrimination disabilities in humans. Histological studies of the cochlea and eighth nerve of animals with experimentally induced lesions upon which careful pre-and postoperative pure tone audiograms had been made (by both behavioral and cortical techniques) showed that only a relatively low percent of the ganglion cells and fibers of the eighth nerve are necessary for the perception of pure tones at or near threshold. Schuknecht²⁴ has written:

"Experimental and clinical evidence has established that these relationships (meaning poor discrimination associated with small pure tone loss) are characteristic of neural degeneration. For example, it has been shown experimentally that seventy-five percent of ganglion cells may be lost to certain regions of the cochlea without creating threshold elevations for frequencies having their fields of excitation in those regions, whereas greater ganglion cell losses do create threshold losses; furthermore, audiological studies on human patients with acoustic neurinomas have shown that decreased speech discrimina-

tion may exist with disproportionately small pure tone threshold losses. The implication of this finding is that only a few fibers are needed to carry impulses of threshold magnitude."

The speech discrimination difficulties of the aged therefore, could be attributable to a degenerative reduction in the number of ganglion cells and fibers of the auditory tract, which reduction, until very severe, does not induce a great deal of hearing loss for pure tones.

Degenerative changes of a cortical nature may likewise be reflected in poor speech discrimination even though tonal perception is good. Bocca3. 4. 5 after considerable experimental work on human subjects with temporal lobe lesions has recently reported on the hearing ability of the aged. A selected group of older subjects " . . . showing the best possible audiometric curves in relation to age and the best possible performance in psychometric tests. and normal responses to traditional speech audiometry were administered a variety of tests designed to differentiate cortical from non-cortical disability. The results for the aged on test items as distorted voice, interrupted voice, accelerated voice, long sentences, long lists of words, meaningless sentences etc., when compared to results which had been obtained from cases of temporal lobe injury, offered supportive evidence that the hearing difficulties of the aged are similar to those seen in subjects who have had a temporal lobe tumor and thus by inference cortical in nature. It is apparent from the above cited research that the auditory problems of later life cannot be adequately understood in terms of acuity loss per se.

HANDICAPPING PURE TONE AND DISCRIMINATION LOSSES. It is customary in this country to measure auditory acuity for pure tones at frequencies 125, 250, 500, 1000, 2000, 4000, and 8000 cps. These three frequencies 500, 1000, and 2000 cps are referred to as the speech frequencies because of the high correlation between the average loss for this band and the loss for speech as evaluated by Harvard Spondaic words. (Harvard Spondaic words refer to eighty-four two syllable words with equal

stress on each syllable and approximately equal intelligibility such as baseball, iceberg, sidewalk etc. which were found to measure effectively the threshold loss for speech, and to have a high relationship with tonal loss for the frequency band 500 to 2000 cps inclusive.) When the average hearing loss for the speech frequencies does not exceed fifteen decibels, hearing for speech is usually considered to be within normal limits. A loss for the speech band between fifteen to thirty decibels, constitutes a slight hearing loss, and one that at most requires only occasional use of a hearing aid. Speech reading might be recommended depending upon circumstances. When the average loss through the speech range exceeds thirty decibels in the better ear, the use of a hearing aid should be definitely considered. Hearing losses between thirty decibels and forty to forty-five decibels, are classified as requiring frequent use of a hearing aid. The range of 40-45 db to 65-70 db is generally regarded as the area of most successful use of a hearing aid. As hearing loss exceeds 70 decibels the benefits from an amplification device diminish, but no degree of loss short of total deafness, (which is relatively rare) should be regarded as hopeless, until otherwise demonstrated. The successful use of high powered amplification systems with deaf children has been clearly proven by Hudgins18, 19 In addition, there is a sizeable number of severely deafened adults who, despite total or almost total discrimination loss for speech as well as almost total loss for tones, are successful hearing aid users by virtue of demonstrable improvement in speech reading ability as a result of amplification.

Auditory discrimination loss is usually evaluated by means of the Harvard PB lists or the Hirsh revision of these lists. The Harvard PB or phonetically balanced word lists refer to twenty lists of fifty monosyllabic words each which were developed during the last war at the Psycho-Acoustic Laboratory. Each list of fifty words contains the sounds of the English language in approximately the same proportion as they would occur in a sample of ordinary conversation. The lists are given sufficiently

high above the threshold for speech to insure a perfect score if this is possible. A weight of two points is assigned to each word correctly heard. Thus if all fifty words of a list are repeated correctly a score of one hundred percent is obtained. But if, for example, eight words are missed, the discrimination rating would be eighty-four. The Hirsh revisions of some of the Harvard lists are easier versions of the test. These tests are widely employed in Hearing Clinics (administration being either from records or through monitored live voice and represent the best present day method for evaluating general discrimination ability for speech.

To determine therefore how adequately an individual hears conversation, threshold loss, as well as clarity loss for speech must be evaluated. Davis and his associates developed an index, by which the combined effects of threshold and discrimination loss, with reference to the social adequacy of hearing, could be expressed with a single number. This concept is called the social adequacy index. However, the table which was devised to facilitate the determination of the social adequacy index is applicable, strictly speaking, only to the original Harvard spondee and PB recorded tests, since values change, depending upon test materials, and the method of administration.

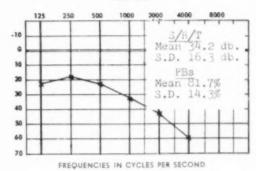
A rather widespread procedure for reporting the adequacy of one's hearing is to give both the speech reception loss and the maximum discrimination score. From what has previously been said about degree of sensitivity loss relative to the need for a hearing aid, the importance of this information is evident. Maximum discrimination scores likewise can be classified to give a separate index in this respect. For example, one such classification which is employed with the Harvard PB lists is as follows: one hundred to ninety percent is normal; ninety to seventy-five percent is indicative of slight difficulty, somewhat like what might occur in a telephone conversation; seventy-five to sixty percent gives moderate difficulty; sixty to fifty percent great difficulty, with fifty percent being about the level below

AGE GROUP 60-69, 56 SUBJECTS. Mean Age 64.6 yrs., S.D. 2.8 yrs.



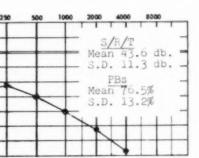
HEARING LOSS IN DECIBELS Mean 34.8 db. 3.D. 18.8 db. 10 PBs Mean 80.7% 20 S.D. 15.4% 30 40 50

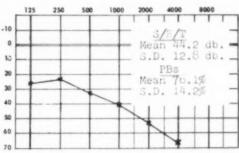
LEFT EAR



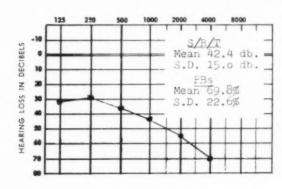
FREQUENCIES IN CYCLES PER SECOND







AGE GROUP 80-91, 24 SUBJECTS. Mean Age 83.9 yrs., S.D. 3.1 yrs.



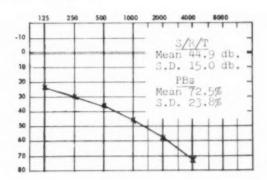


FIGURE I. Mean air conduction thresholds of the right and left ears for age groups 60-69, 70-79 and 80-91. The means and standard deviations of the speech reception thresholds as well as the means and standard deviations of the PB scores for each ear of each age group are also shown.

HEARING LOSS IN DECIBELS

18

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which continuous speech cannot be followed; fifty to forty percent very great difficulty; forty to twenty percent extreme difficulty. However, hich continuous speech cannot be followed; are used, which are somewhat distorted versions and much more difficult, then the above classification would not apply.

To recapitulate then, one's ability to discriminate the sound of speech is an important variable of hearing which requires evaluation in conjunction with the degree of acuity loss. Individuals with identical threshold losses for tones may show wide variation in ability to hear clearly. The aged in particular evince poorer discrimination than is expected from their lessened tonal acuity.

An Auditory Study

In order to bring into focus the foregoing discussion as well as to provide additional data for the age range sixty to ninety-one the records of one hundred and thirty-five patients who had been seen in the clinic were selected for study. In Figure 1 are summarized the data for pure tone threshold, speech reception threshold, and discrimination scores of the left and right ears for age groups 60-69, 70-79, and 80-91. The sexes were represented approximately equal in each group. All of the patients had been diagnosed as presbyacousic. None had conductive hearing losses. (The average bone conduction curves are not shown. They were either superimposed on the air curves at each frequency or poorer.) In each patient the hearing loss had been gradual. The onset had occurred after age fifty, and had not been preceded by either ear disease or drug treatment. Patients who had had a history of severe noise exposure were excluded from the study. Data for pure tone loss at 8000 cps were not analyzed because of the frequent absence of hearing at this tone by the subjects at maximum intensity of the audiometer.

As is apparent from Figure 1, hearing loss for tones as well as for speech is similar for each ear in each age group. None of the differences between the ears of each group was statistically significant. Discrimination scores

likewise did not differ significantly between ears in each of the three groups.

Next, comparisons of the speech reception thresholds and discrimination scores for each ear were made between groups. The differences in the speech reception thresholds of the sixty to sixty-nine year group and the seventy to seventy-nine year group for the right and left ears were highly significant at the one per cent level of confidence. This finding indicates that a real difference existed between the groups in threshold acuity for speech, differences between the sixty to sixty-nine year group and the eighty to ninety-one year group were also treated statistically. For the left ears the magnitude of the difference was significant at the one percent level. For the right ears however the difference was at the five per cent level. In the latter instance the chances are ninety-five out of a hundred that a real difference exists. Differences between the seventy to seventy-nine and the eighty to ninety-one year groups were not significant.

When the discrimination score differences between groups were studied only two proved to be significant.

The difference between the left ears of the sixty to sixty-nine and the seventy to seventy-nine year groups was significant at the five per cent level. Also, the difference between sixty to sixty-nine year group and the eighty to ninety-one year group for the right ears was significant at the five percent level.

To further evaluate the relationship between age and discrimination a partial correlation between the two variables was computed with degree of loss (the average acuity for frequencies 500-1000-2000) held constant. A correlation of .1509 was obtained indicating a positive but low degree of relationship. In other words, discrimination tended to decrease as age increased, but the relationship is too poor for predictive purposes. A similar relationship was found between discrimination and acuity loss (the average loss for frequencies 500-1000-2000) when chronological age was controlled statistically. The obtained partial correlation was .159. This result is consistent with the re-

port of Pestalozza and Shore²⁰ in trend but, is not nearly as strong.

It will be recalled that hearing loss for the speech range of thirty decibels or greater in the better ear indicates that a hearing aid definitely should be considered. The mean hearing loss of about thirty-four db. for speech (34.6 and 34.2 decibels for the right and left ears respectively) of the sixty to sixty-nine year old subjects shows that as a group they required help by virtue of lessened acuity. Relative to the two older groups poorer acuity was even more pronounced.

With regard to discrimination the sixty to sixty-nine year group as well as the next older group fell within the limits of slight difficulty, while the oldest group was at the upper limits of the moderate difficulty classification. As a general statement it might be said that none of the groups on the average evinced discrimination difficulty of a magnitude which could be regarded as possibly incompatible with successful use of amplification. It is a well known clinical fact however, that the prognosis for successful use of a hearing aid is much poorer with the aged. There are of course other factors in addition to degree of loss and discrimination ability which must be evaluated, such as general attitude of the patient, whether or not there is a felt need for better hearing, the actual effects of amplified sound on the patient's behavior (nervousness etc.), training possibilities in the use of the aid, etc. With reference to the self-felt needs of the patient, interestingly enough a majority of our subjects in the sixty to sixty-nine year age group was employed and had sought help because of a recognized need for better hearing in business associations. The converse was true of the other two groups, the majority having come to the clinic as a result of the insistence of relatives.

A frequent complaint of old people who have been brought to the clinic is that "words seem to run together" particularly when at church or at social gatherings. Hearing aids at times appear to intensify the difficulty. Although the ear-level type hearing aids and binaural fittings in our experience have been very helpful in the case of older patients, nevertheless there are substantial numbers whose adjustment to amplified sound is poor.

Present Investigation

In order to obtain more information relative to the hearing problems of the aged, we have recently begun an investigation to attempt to differentiate more specifically the type of deafness and to determine more definitely the prognosis for use of amplification. That the hearing problems of later life can be either of a cortical nature^{3, 4, 5} or of auditory tract origin^{12, 20, 24, 24, 25} seems rather well established. In addition general cortical deterioration may be reflected. If now present standardized tests of discrimination could be utilized to differentiate cortical from non-cortical impairment among the aged, the clinical armamentarium would be enhanced.

Recently, in the clinic, we have been administering both the W-22 (relatively easy) recorded discrimination test as well as the more difficult (somewhat distorted and faster presentation) Rush Hughes recordings of the Harvard PB lists. It is of course expected, (which occurs with normal ears) that scores obtained on the former test will be somewhat better than on the latter, the differential however, is relatively constant. Among our old age subjects nevertheless, it is not unusual to find very marked differences between the two tests. Figure 2 illustrates the records of two patients from our files.

As will be noted from Figure 2, Case B had normal discrimination as measured by the W-22. The Rush Hughes results were somewhat lower, the differential being twenty percent in the right ear and twenty-eight percent in the left ear. Case A, likewise, showed good discrimination on the W-22 but marked loss on the Rush Hughes, the difference here amounting to fifty-four percent for the right and left ears. Case B had noted a gradual diminution in hearing over a period of about fifteen to twenty years. Case A has experienced reduced hearing for about five years. Neither patient gave evidence of recruitment by toler-

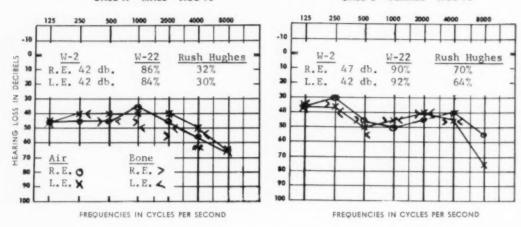


FIGURE 2. Pure tone and bone conduction curves, speech reception thresholds and discrimination scores of two subjects recently examined in the Hearing Clinic.

ance tests. In both instances hearing loss had not been preceded by ear infection, drugs, or illness. Neither patient experienced either tinnitus or vertigo, nor had either been aware of these symptoms during the decline in hearing. Patient B, although aware of hearing difficulty, nevertheless felt that she got along reasonably well in conversation. Patient A, on the other hand, complained that "conversation was jumbled at board meetings." Both were fitted with hearing aids, but in the instance of B the results have been much more satisfactory to date.

If, as Bocca³ has reported, the breakdown manifested by old age subjects on various types of difficult speech material suggests cortical involvement, it may be hypothesized that a large difference for each ear between the two discrimination tests, such as in A, reflects generalized cortical dysfunction. In other words, irrespective of hearing loss, large bilateral differences would be expected to occur. When however, relatively small bilateral differences are found in conjunction with hearing loss the locus of disability is either in the cochlea or auditory tract.

The rationale for the above is as follows.

Degenerative changes or lesions in the cochlea or auditory tract may induce poor discrimination in both tests. Differences between the tests are expected to be relatively small and somewhat comparable to those found in the normal ear. The transmitted speech pattern may be altered by virtue of a defective analyzer (cochlea) or eight nerve. But the difference in the test results (the W-22 and Rush Hughes) is a function of the tests when there is no cortical abnormality. Poor cortical function however, is manifested by aspects of the second test (Rush Hughes), such as a slightly faster presentation of words etc., which reflect a reduced capacity to attend, integrate etc. Cortical dysfunction is therefore superimposed on the defective pattern and the difference between tests is magnified.

When however, the two ears are similar by pure tone test with the discrimination differential much larger in the one than in the other, an involvement of the temporal lobe contralateral to the ear with the large difference is suggested. This inference stems from Bocca's findings of decreased discrimination in the contralateral ear in patients with temporal lobe lesions, and likewise from their failure to sum-

mate speech under certain conditions of binaural stimulation. 3, 4, 5, 9

Aside from the possibilities of the difference score as an aid to diagnosis, it may also prove useful in hearing aid selection, and in prognosis relative to use of a hearing aid. For example, unequal difference scores between ears may be one of the reasons certain individuals do not adjust well to binaural hearing aids. In such a case it might be found that a monaural instrument is preferable. This problem is also being studied.

In our present battery of tests for presbyacusia are included E.E.G. tracings, neurological, and psychological examinations. Harvald16 reported a high incidence of abnormal E.E.G. patterns in two hundred and ninetynine subjects over sixty years of age. Moreover, the percent of abnormality increased markedly with each decade of life. In fact, only twentynine percent of the subjects eighty years of age and older had normal E.E.G. tracings. In addition, an abnormality was found more often in the left lobe, the ratio being about two to one. The study in progress therefore, will be directly concerned with the relationship of the E.E.G., psychological, and neurological findings to the difference score as described.

Summary

- 1. Various facets of the auditory problems of the aged were discussed.
- Average pure tone air conduction thresholds, speech reception thresholds, and discrimination scores for one hundred and thirty-five patients who had been seen in the Kansas University Medical Center Hearing Clinic were presented.
- An investigation of the hearing problems of the aged currently in progress was summarized.

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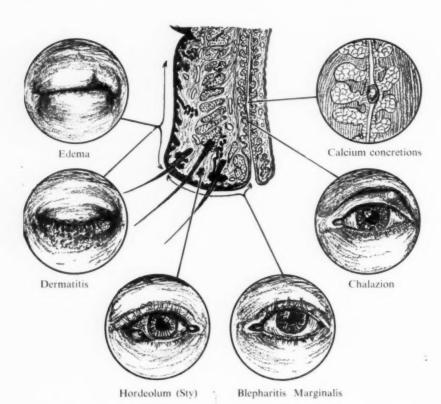
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CLINI-CLIPPING



Cross section through upper eyelid showing areas in which eyelid diseases occur.

Excessive and Abnormal Vaginal Bleeding

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Excessive or abnormal vaginal bleeding is usually sufficiently frightening to the patient to precipitate a visit to the physician. Prolonged menstruation in amount or duration, important in itself, is of minor significance when compared with frankly abnormal bleeding. All abnormal female genital bleeding has its origin in either a functional aberration or an organic disorder. It is exceedingly important before beginning extended therapy to determine the nature of the lesion one is dealing with. The consequences of delay in some instances can be disastrous.

The purpose of this communication is to document in outline form the pattern we have followed for the past several years and which we have found to be helpful in the establishment of a diagnosis and for initiating treatment. Although much the same pattern is followed in basic form in hospital practice, it is essentially an office procedure applicable in general practice.

When once the patient places herself under the doctor's care it is his binding obligation to seek diligently for the cause of the anomalous bleeding and to apply the therapy which will give relief and finally cure if possible. It is not my purpose to oversimplify the task, but I believe it can be done.

Taking enough time to make a diagnosis of disease in a frightened patient and fending off distraught members of her family can be a most trying task, but it must be done. Great care must be exercised not to classify a patient's complaints as functional bleeding until all organic lesions have been satisfactorily excluded.

The schema below adopted with modifications from McLennan lend itself to ready use.

Schema as Adopted and Modified from McLennan¹

- A. Excessive Bleeding Related to Menstruction
 - 1. Myomas
 - 2. Endometrial polyps
 - 3. Irregular or delayed shedding
 - 4. Adenomyosis
- B. Bleeding Due to Organic or Miscellaneous Lesions
 - 1. Disturbed Pregnancy
 - (a) Abortions, threatened, in progress, complete or missed

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- (b) Ectopic pregnancy, acute or chronic
- (c) Moles, simple, blood or hydatidiform
- (d) Post-partum uterine atony and puerperal subinvolution
- Carcinoma of vagina, cervix, cervical stump, corpus, mixed mesodermal tumors of the corpus and sarcoma.
- 3. Polypoid Lesions
 - (a) Cervical or endometrial polyp
 - (b) Pedunculated submucous myomas
- 4. Endometrial Infection
- 5. Lesions of the Tubes and Ovary
 - (a) Chronic pelvic inflammatory diseases
 - (b) Ovarian cysts and tumors
 - (c) Endometriosis
- 6. Vaginal Trauma
 - (a) Rape, chemical burns, pessary and foreign bodies
 - (b) Senile vaginitis
- C. BLEEDING UNRELATED TO MENSTRUA-TION OR ORGANIC DISEASES (DYSFUNC-TIONAL BLEEDING)
 - 1. Endometrial hyperplasia
 - 2. Ovulation bleeding
 - Bleeding following estrogen administration
 - 4. Atrophic (senile) endometrium
- D. Abnormal Bleeding Initiated by Systemic Disturbance
 - Hypertension, hemophilia, cardiac failure, toxic shock, blood poisoning, sexual excesses.
 - Neurosis, psychosis and emotional shock.

History Taking

It is an oft-repeated maxim that a good history should be taken, but what is a satisfactory history in abnormal vaginal bleeding? A helpful history should include the patient's age, time of the menarche, menstrual pattern, and all facts concerned with previous pregnancies and their terminations. It is also good to know about previous surgery and any complications which may have occurred. Whether or not she

has been taking medications prior to the onset of bleeding may have an urgent bearing on the problem. The patient may be a poor historian or cannot recall how severe the bleeding has been. Bleeding which requires the use of six or more perineal pads in twenty four hours is definitely excessive. Then too, discharge, bleeding, pain pattern is significant. Bleeding that is preceded by a noticeable discharge and followed by pain may be concealing a malignant neoplasm. A history which has clarity and definition will often serve by itself to separate a functional from an organic disturbance.

Physical Examination

A good physical examination presupposes good lighting and a willingness to spend considerable time especially in the careful assessment of the genital tract. An adjustable light capable of being focused upon the area under examination is of the utmost importance. Many diagnoses have been delayed or missed completely for no better reason than that the examiner could not see clearly what he was investigating.

Blood emanating from lesions of the vulva may be mistakenly assumed by the patient to be originating from the vagina or above, viz. fissures or ulcerations of the vulva, Bartholin's abscess, diverticulum of the urethra, or varicosities of the vulva. Thorough inspection is customarily sufficient to eliminate most of these as the cause of abnormal bleeding. The vaginal mucosa requires concentrated attention because it is bathed by all blood from the upper genital tract.

Be it said that the full physical examination encompasses the body as a whole and not limited to the genital tract. The breasts, the supraclavicular regions, the contour of the abdomen, the presence or absence of masses, fluids and areas of tenderness, should all receive attention. Scars of previous operations are especially significant.

It has always been advantageous for inspection to precede digital examination. No medical student has ever been taught to do differently. Smears and other studies are best done before lubricants are introduced. A little warm water on the speculum will generally obviate the use of lubricants.

At times it is difficult to identify the bleeding point especially those originating in the vaginal wall adjacent to the cervix. In such instances the use of a fenestrated speculum or even the ordinary bivalve speculum partially open and gradually rotating it, serve to uncover the area of bleeding. When the speculum is fully open enough tension may be exerted on the bleeding vessel to cause a temporary cessation of bleeding.

Vaginal Trauma

Rape, chemical burns, pessary and foreign bodies as a source of vaginal bleeding can frequently be determined from the history and the visible findings.

The injuries caused by forcible entrance into the vagina usually bleed freely. The sites of injury are frequently located beyond the fourchette or about the anterio-cervico vaginal junction.

Packing with sterile vaseline gauze will suffice to control bleeding in the majority of cases. Inasmuch as a medico-legal question is involved it is best to do sperm identification in every case.

Pessaries too long in situ and the cause of bleeding, need to be removed with great care. Senile vaginitis is a condition frequently found in post-menopausal women, equally common in the artificial as well as the natural menopause. The lesion is customarily located in the posterior and lateral fornices. The reddened mucosa is occasionally the site of bleeding. After control of hemorrhage, stilbestrol suppositories used nightly will promote healing.

The increased attempt in some areas to employ potassium crystals or in solution as an abortifacient is giving rise to fresh cases of burns and bleeding from the vagina. In these instances the bleeding point is customarily surrounded by an eschar. Flushing the vagina with sterile water before packing with sterile gauze or suturing the bleeding vessel will control most of these in the office. In some instances

blood loss has been sufficiently grave to require transfusions.

Some of the conditions that originate in the visible areas of the cervix can be properly identified by thorough inspection; but others require ancillary measures for full clarification. Also some conditions from the corpus will present sufficient evidences about the external os to enable identification, viz. incomplete abortions, endometrial polyps.

Erosions and other suspicious lesions of the cervix and vagina should best be biopsied. Lesions about the squamo-columnar region of the cervix warrant prompt attention. Any good punch biopsy instrument can be used to good advantage.

The specimen should be taken around the clock, 6, 9, 12, and 3 o'clock. Painting the cervix with Schiller solution (one part iodine, 2 parts potassium iodide and 300 parts water) will often help to delineate the areas which are more likely to bear malignant cells. Every effort should be made to include portions of the endocervix with the specimen. Care must be exercised in handling the material as cancer cells are readily dislodged, especially from the crumbly endocervix. Immersing the specimen in ten percent formalin solution and sending it promptly to the pathologist concludes this aspect of the investigation. Bleeding, immediate or delayed, from the areas of biopsy can be readily controlled by packing with gauze behind a small piece of oxycelated cellulose which has been placed directly on the bleeding point. Needless to mention that all materials collected from the cervix or vagina should be examined microscopically.

Lesions of the Cervical Stump

Lesions of the cervical stump are especially prone to be overlooked. The woman who has had hysterectomy is apt to minimize the significance of bleeding in the belief that all the womb had been removed. This incomplete information may also be misleading to the physician. This type of cancer has a low survival rate and presents difficult problems in management. It should be sought out and attacked

with even greater vigor than cancer in an intact uterus. The finding of cancer in the female genital tract, like cancer elsewhere, demands prompt, vigorous, and decisive specialized management.

Diagnostic Procedures

- 1. PAPANICOLAOU TEST—It is good office practice to collect smears from the vaginal pool for cytologic study in all instances of abnormal vaginal bleeding. This is especially urgent in the older age group.
- 2. CURETTAGE—A good diagnostic curettage can only be done in a hospital under anesthesia, but helpful information may be gathered in the office by examination of material extruded from the cervix.

Aspiration biopsy with a suction curette may be employed to advantage to collect material from the endometrium for study.

3. CULDOCENTESIS—The cervix is exposed by the bivalve speculum. All secretions present are carefully swabbed out and the cervix and vagina painted with zephrian or aqueous mercurochrome solution. The posterior lip of the cervix is grasped with a tenaculum and elevated toward the symphysis. With a quick thrust, a No. 18 spinal needle attached to a 10 cc. syringe is introduced into the cul-de-sac parallel to the cervix and close to it so that there is no injury to the uterus and the gut. A depth of two centimeters is adequate. Rapid suction on the syringe will customarily yield non-clotting blood if there is intraperitoneal bleeding. The non-clotting tendency of this blood may best be demonstrated by placing a few drops on a piece of gauze or on a glass slide. Flakes of fibrin will separate. There are several inherent sources of error such as dry tap, misleading fluids obtained from an ovarian cyst, tubo-ovarian abscess, or even fluid from generalized peritonitis. Inadvertent penetration of a blood vessel will yield blood, but as against blood from a ruptured ectopic this blood will readily clot.

By and large this simple test has been found to be upwards of ninety percent reliable in many laboratories including our own. Transabdominal centesis, an equally simple procedure, is employed to good effect in some clinics.

 Culdoscopy—This added diagnostic procedure offers an excellent opportunity for inspection of the pelvic structures. Anyone trained in its use may well apply it to office diagnosis.

Office Management

Patients suffering from too long or too copious menstruation are not customarily emergency gynecological problems. When they first present themselves for treatment a striking number of them will readily fit into study under the Schemata outlined above. A history carefully taken and a searching physical examination will often indicate the need of the moment. Excessive bleeding that has been in progress for any length of time must be stopped. Stilbestrol in massive doses 50 to 75 milligrams three times daily is efficacious.

After the bleeding stops, further treatment is modified largely by the patient's age, the exact nature of the lesion, and the need to preserve the child-bearing function.

Abortion in its various ramifications can usually be determined by history and office examination. Those which have been completed require only observation; others require gentle removal of the material protruding from the cervix, and the giving of ergot preparations to encourage uterine contraction. And then there are those cases which are perplexing to the most expert gynecologist working with the best hospital facilities.

Neoplasms of the Placenta

While hydatidiform mole and chorion-epithelioma, neoplasms of the placenta, may be a source of abnormal vaginal bleeding, their occurrence is very rare. Attempts in their detection can be started in the office where a suggestive history and physical may indicate the need to collect urine for gonadotropin studies. Treatment of these conditions is rather radical, although the recent introduction of the folic acid antagonist² in their management may

be ushering in a new era in therapy.

The history, physical findings, and ordinary diagnostic procedures may be adequate in many cases to enable one to diagnose ruptured ectopic pregnancy with certainty; but the chronic or equivocal case may so faithfully mimic other intrapelvic disorders as to confuse and defeat all our diagnostic measures. Many of them are diagnosed only after laparotomy and microscopic examinations. These cases like endometriosis, cancer and pelvic tuberculosis disobey all the customary patterns of pelvic pathology.

It can be said nevertheless, that any patient with an uncertain menstrual period over many months, irregular vaginal bleeding, increasing anemia, and erratic pelvic pain associated with a pelvic mass should be suspected of harboring this disease. Prompt surgical removal after preparation of the patient is the only treatment for any type of ectopic pregnancy.

Polypoid Lesions

Polypoid growths as well as small pedunculated submucous myomas can usually be removed by using a tonsil snare or by clamping the pedicle and twisting it free. When there is a broad attachment of the base, the placing of a suture may be necessary to control bleeding. The use of the cautery for removal is inadvisable as this may interfere with microscopic studies.

Endometrial infection as a cause of anomalous bleeding must be carefully treated with appropriate antibiotics until it is brought under control, as indicated by a declining temperature. If bleeding persists the uterus must be rid of retained infective materials by careful curettage.

Bleeding that has its origin in lesions of the tubes and ovaries is not always easily identified in the office or even in the hospital for that matter. Many yield sufficient palpatory information to be suggestive. Others can be fully diagnosed only after laparotomy.

Abnormal vaginal bleeding arising from chronic inflammation of the tube has its basis in a concomitant ovarian dysfunction. Most of these require surgical therapy for complete cure.

The possibility of cancer or tuberculosis as a cause of the bleeding should not be overlooked. Solid ovarian tumors which exceed five centimeters in circumference whether giving rise to anomalous vaginal bleeding or not should be viewed with suspicion because of the high malignant potential. Culdoscopic visualization may give added information but removal and careful study is the preferred treatment.

Endometriosis as a cause of abnormal bleeding can be suspected if the patient's symptoms include progressive dysmenorrhea and a long period of sterility. If in addition to the triad of progressive dysmenorrhea, sterility, and abnormal vaginal bleeding, there are findings on palpation in the posterior cul de sac and on the uterosacral ligaments, the diagnosis becomes apparent.

Some of these patients respond well to massive doses of stilbestrol, others to uterine suspension associated with removal of the implants, others only to radical surgery. The age of the patient will govern the treatment.

Functional Bleeding

Functional bleeding, also more properly called dysfunctional bleeding, is the principal cause of abnormal vaginal bleeding in a large proportion of patients having this complaint. To repeat, it is only reasonably safe to make this diagnosis after every other possible cause for the bleeding has been excluded.

The bleeding from a hyperplastic endometrium is perhaps one of the commonest manifestations of this disorder. This is a diagnosis which can only be made after studying specimens of endometrium removed by curettage. It is now an established fact that any type endometrial changes can cause excessive and abnormal bleeding. The significance of diagnostic currettage cannot be overestimated especially when an incipient malignancy may also be present.

An aspiration biopsy done in the office may give sufficient information to warrant the start of treatment; though curettage is quite often all the treatment needed. Despite the voluminous literature on the subject, in actual practice the treatment of dysfunctional uterine bleeding is dictated largely by the patient's age. Bleeding during the adolescence is not nearly as significant as that occurring during the child-bearing age or after the menopause. As a general rule the later in life the bleeding occurs the greater the danger of more deep seated trouble. A large percentage of the bleeding occurring in teen-agers need no active therapy; the condition usually corrects itself during the period of observation. Even in younger adults it should be borne in mind that there is always a tendency to spontaneous regression even in seemingly obstinate cases. This of course adds to the difficulties in assessing the true value of any form of therapy.

Hormone therapy, estrogens, and testosterone in large doses are the basis of medical treatment. The estrogens exert their effect on the parent organ the ovary, exerting an inhibiting action which blocks the stimulation from the anterior pituitary. The ovary is thus temporarily put to rest, a sort of temporary castration. The same effects could be obtained by the use of x-rays or radiation but the safety of the hormone is more inviting.

Testosterone, it is felt, exerts its influence on bleeding through depression of the anterior lobe of the pituitary. The danger of virilism inherent in the use of this agent makes it a less attractive therapeutic agent however.

Even in the presence of severe bleeding, hemostasis may be affected by large doses of estrogens. The plan of management suggested by Kaufman and Blinick³ have given generally good results.

Give 0.5 milligrams of ethinyl estradiol by mouth every hour until bleeding has checked. As these authors pointed out the medication should not be stopped abruptly. Reduction should be gradual until the patient is receiving 0.02 milligrams daily. The purpose of the gradual reduction is to reverse the possibility of withdrawal bleeding. To help in the re-establishment of normal periods, cyclic therapy is continued for three to four months, i.e. ethinyl

estradiol .02 milligrams three times daily for twenty-one days. During the last ten days of each cycle, 10 milligrams of progesterone are added to each dose of estradiol.

The recent introduction of the long acting "dela-hormones" appears to offer an escape from the time consuming schedule that we have been following. Whether estradiol valerate, a high potency mixture containing 10 milligrams of estradiol per cubic centimeter in sesame oil, and the progesterone preparation of 17-alpha hydroprogesterone caproate in sesame oil, (called Delestrogen® and Delalutin® respectively) will eventually supplant the longer cycles, remain a matter for extended clinical test. Our experience with these products has been too limited for us to pass judgment, but we are hopeful relatively to their value.

Systemic Diseases

Very often the presence of these diseases is already known to the patient before abnormal vaginal bleeding sends her to the doctor. Appropriate medical or psychiatrical measures must be instituted as the case warrants. For amelioration of the local manifestation, temporary packing, ergot preparations and estrogenic suppression of the parent organ will give some measure of relief.

Conclusion

Many patients having excessive and abnormal vaginal bleeding can be adequately managed in the office if one follows a set plan of procedure before attempting to give the much needed relief.

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The Effect of a
Polysorbate
80-Choline-Inositol
Complex

HYPERCHOLESTEREMIA

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During the past several decades, increasing attention has been directed to the association of prolonged hypercholesteremia and atherosclerosis. An array of evidence for this association can be marshalled. It has been repeatedly demonstrated that hypercholesteremia and atherosclerosis can be readily produced in laboratory animals by feeding them diets high in cholesterol. Chemical analysis of the atheromatous plaques in animals and in humans show them to invariably consist of forty to seventy percent of cholesterol.

The incidence and severity of atherosclerosis is unduly high in conditions associated with elevated blood cholesterols such as diabetes, nephrosis and essential hypercholesteremia. As a group, patients with manifest coronary heart disease have higher mean serum cholesterol levels, although the relationship in individual patients is far from perfect. This was most recently shown in the majority report of a Cooperative Study on Lipoproteins and Atherosclerosis¹ which concluded that atherosclerosis

as manifested by definite evidence of coronary arterial disease was associated with an antecedent elevation of the serum lipoproteins and of the serum cholesterol. They further concluded that there was no advantage in the complex lipoprotein measurement, which cannot be done in the ordinary laboratory, over the simpler measurement of cholesterol in the characterization of patients prone to develop coronary heart disease. Recent geographic studies have shown that the incidence of coronary heart disease is lower in those regions where there is a smaller percentage of dietary fat and consequently lower mean serum cholesterols.

In view of this evidence it would appear that sustained reduction of excessive cholesterol levels is desirable. Attempts to reduce blood cholesterol by stringent dietary control are seldom successful, since very few patients will adhere to a diet rigidly restricted with respect to fats. The findings of Sherber and Levites² and the Alberts³ that successful reduction of hypercholesteremia can be achieved with the aid of a polysorbate 80-choline-inositol complex, suggested a practical alternative.

The patients comprising this study are controlled diabetics attending the Diabetic Clinic

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TABLE I: EFFECT OF POLYSORBATE 80-CHOLINE-INOSITOL COMPLEX ON SERUM CHOLESTEROL LEVELS IN HYPERCHOLESTEREMIC, CONTROLLED DIABETICS

	Initials	Age	Sex	Color	ATHEROSCL. COMPLICATIONS*			CHOLESTEROL LEVELS	
Case					Eye	Periph. Vasc.	EKG	Initial	On Therapy
								(2 determinations)	
1.	1.G.	67	F	W	+		+	300; 330	214
2.	G.G.	76	F	W				375; 335	220
3.	E.G.	60	F	W	_	+		370; 475	253
4.	G.J.	52	F	W	+	+	-	345; 370	287
5.	A.K.	55	M	W	-		_	350; 445	200
6.	E.M.	68	F	W			+	300; 350	246
7.	R.O.	3.1	F	C	-	-	-	345; 305	222
8.	B.S.	61	F	W	+	+	-	400; 365	228
9.	M.T.	65	F	W	-		+	390; 375	230
10.	S.M.		M	W	+			305; 345	260
11.	1M.	69	F	W	+	+	+	300; 385	210
12.	S.M.	56	F	C	+		_	365; 330	205
13.	C.P.	72	F	W	+	+	-	365; 290	225
14.	E.B.	54	F	W	+	+	+	365; 320	323†

^{*+} means present; — means absent; ± means slight or not significant; Blank means not determined or no data. †(took only 1 bottle medication)

of the Einstein Medical Center (S. Division) in whom at least two serum cholesterol determinations, taken two weeks apart, showed hypercholesteremia. Choiesterol levels of 300 mgms. per 100 ml. or higher were arbitrarily established as hypercholesteremic levels. Using this criterion, seventeen of the thirty-nine patients studied were classified as hypercholesteremic. This represents an incidence of 43.6 percent which is appreciably higher than the 24.5 percent incidence reported in the group studied by Sherber and Levites.

The atherosclerotic retinal, peripheral vascular and cardiovascular complications in these hypercholesteremic patients were then determined by means of eye and peripheral vascular examinations and by electrocardiography. Such studies were conducted in fourteen patients of this group, and evidence of atherosclerosis was found in thirteen cases. By way of comparison, only four of the seven patients in the "normocholesteremic" group who were examined for such complications presented evidence of atherosclerosis.

The effect on the elevated blood cholesterol levels of administering a polysorbate 80-choline

inositol complex (Monichol*) * was then investigated. The treated patients received the polysorbate 80-choline-inositol preparation for a period of two to seven months, during which time the serum cholesterol responses were established. Medication was then halted to determine whether the patients would regress to their previous hypercholesteremic states. There were no significant changes in the insulin dosage, diet, weight and degree of diabetic control during this period.

The hypercholesteremic patients received instructions to take one teaspoonful of the medication four times daily. Their conscientiousness in following the regimen was gauged by the frequency with which the subjects returned for refilling of their prescriptions and by careful questioning.

Initially, a modification of the Bloor method was used for cholesterol determinations.

^{*} Monichol®, Polysorbate 80-Choline-Inositol preparation, was supplied by Ives-Cameron Company, Philadelphia, Pennsylvania. Each teaspoonful {5 cc.} contains: polysorbate 80, 500 mg.; choline dihydrogen citrate, 500 mg.; and inositol, 250 mg.

Thereafter, the more rapid method of Zlatkis⁴ was investigated and over the range employed was found to correlate well with the Bloor technique.

Results

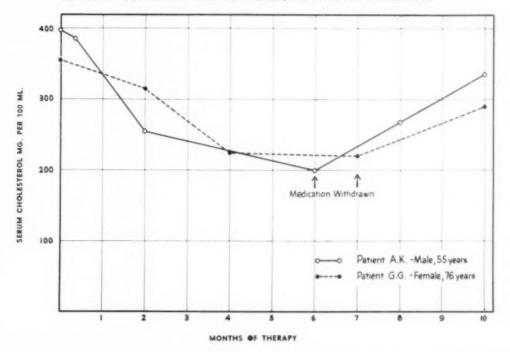
The administration of the polysorbate 80-choline-inositol complex to fourteen hyper-cholesteremic diabetics was followed by significant reductions in serum cholesterol levels in thirteen instances. As can be seen from the data presented in Table I, only one patient (E.B., Case No. 14) failed to show some response to the regimen; in this patient, our records indicate that the medication was not taken as prescribed for any sufficient length of time. In the case of patient A.K., (Case No. 5), control of cholesterol levels was not obtained during a preliminary two-months period when the medication was taken sporadically; however, when the regimen was followed conscientiously

for a subsequent four-months period, his serum cholesterol level dropped from 386 to 200 mgms. per 100 ml.

After medication was stopped for an average period of three months, serum cholesterol levels were again determined in all fourteen patients comprising the original hypercholesteremic group. At this time both the modified Bloor method and the rapid Zlatkis method were used. In every instance the serum cholesterol levels were found to have risen towards their pretreatment values. Figure I demonstrates the typical response of clinic patients to the polysorbate 80-choline-inositol complex and the effect of withdrawal of medication. These results confirm the findings of Sherber and Levites2 that the polysorbate 80-cholineinositol complex will correct hypercholesteremia and that hypercholesteremic levels reappear after withdrawal of the medication.

In this study, of the thirteen hypercholester-

FIGURE 1: TYPICAL RESPONSE OF HYPERCHOLESTEREMIC PATIENTS TO POLYSORBATE 80-CHOLINE-INOSITOL COMPLEX, AND EFFECT OF WITHDRAWAL



emic diabetics showing evidence of atherosclerotic complications, improvement has been
noted in two instances. One is that of a fiftyfive-year-old male (A.K., Case 5) in whom
there occurred a clearing of diabetic retinopathy
after six months of medication. In the other
case, a sixty-year-old female patient (E.G.,
Case 3) who had bilateral popliteal occlusion
and intermittent claudication was able to increase her walking distance from one-half block
to two blocks, with objective evidence of improved circulation, after five months' use of
the preparation.

Medication has been reinstituted in the atherosclerotic hypercholesteremic patients in order to re-establish control of hypercholesteremia. It is expected that a long-term investigation will be required to reach any conclusions regarding the clinical results of correction of hypercholesteremia.

This present study has established that the administration of a polysorbate 80-choline-inositol complex produces significant reduction of serum cholesterol levels in hypercholesteremic diabetics.

The reappearance of pretreatment hypercholesteremic levels shortly after withdrawal of medication, with no other changes in diet or medical regimen, indicates that the complex has a definite action. In their original report Sherber and Levites presented evidence that the possible mechanism of action is by an alteration of the physical state of the cholesterol molecule, increasing its filtration through the renal glomeruli and enhancing its utilization by the adrenal cortex.

While this study does not define the role of cholesterol or its esters in the atherogenic process, it is possible, nevertheless, to draw certain inferences from other observations that bear on the problem. For example, it recognized that ordinarily, in a given individual, there is an efficient homeostatic mechanism capable of regulating the plasma cholesterol level so that it varies over a relatively narrow range. It has been shown that cholesterol exists in labile and

rapidly exchangeable form in normal lipoproteins of plasma, liver and red blood cells.⁵ It has been reported that abnormal types of plasma lipoproteins are often present when cholesterol levels are high,⁸ and that such abnormal lipoproteins are always present in atherosclerotic aortas, whereas the Sf 0-12 fraction is absent from atherosclerotic plaques.⁹ These findings suggest that an error in cholesterol metabolism may be associated with excessive plasma cholesterol levels, and that a high ratio of abnormal plasma lipoproteins may be one of the determinants of atheroma deposition in blood vessels.

Pollack¹⁰ and Moses¹¹ have indicated that the physicochemical form in which cholesterol is carried in the serum emulsion plays a role in the atherogenic process. Kellner, Correll and Ladd¹² were able to reduce the incidence of atherosclerosis in rabbits by altering the physicochemical relationships of serum lipids with the aid of intravenously administered detergents. Massive increases in serum lipids, shown by Seifter and Baeder¹³ to occur in animals after injection of a lipid mobilizing factor obtained from plasma, failed to produce observable lipid deposition in blood vessels; in their experiments no significant changes in proportions of serum lipids occurred.

It would appear, therefore, that the production of a normal type of serum lipid picture is desirable. A long term study would be required to determine whether this could favorably influence the atherogenic process.

In two of our patients clinical improvement, both symptomatic and objective, was observed, and we consider that our results warrant further investigation of the value of polysorbate 80-choline-inositol complex in the management of hypercholesteremic individuals with evidence of atherosclerotic complications.

I wish to thank Dr. David Melenson for his assistance in the study, and Mr. Michael Maiese. Director of Research, Ives-Cameron Company, for his cooperation and supply of medication used in this study.

- 1. Fourteen controlled diabetics with hypercholesteremia were treated for several months with a polysorbate 80-choline-inositol complex. Significant reductions in plasma cholesterol occurred in thirteen patients.
- 2. Of the thirteen hypercholesteremic diabetics showing evidence of atherosclerotic com-

plications, vascular improvement was observed in two patients.

- 3. When medication was withheld for an average of three months, cholesterol levels returned toward pretreatment values in all cases.
- There were no adverse side effects to the medication.

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POST-GRADUATE COURSES

The Woman's Hospital Division of St. Luke's Hospital in New York City will offer a one week course for general practitioners, October 8-14, in "The Conduct of Labor and Delivery."

The course will consist of lectures, demonstrations, work in prenatal and postpartum clinics. Write Mr. Carl P. Wright, Jr., Director, Woman's Hospital, 141 West 109th Street, New York City for prospectus and details. Enrollment will close September 15, 1959.

Principles of

Topical Dermatologic Therapy

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In none of the specialties in Medicine or Surgery is the array of proffered remedies greater than in dermatology. It, therefore, logically follows that the proper choice of such remedies demands a certain amount of reflection and discretion on the part of the practitioner. Moreover, while internal and general medications and even environmental control constitutes an extremely important approach to the treatment of cutaneous diseases, their local management still constitutes our most valuable means for handling them.

The careful selection of a topical remedy, the vehicle which is used, the way it is applied and the way it is removed, may all be important factors in determining the success or failure of topical therapy. One should try, therefore, to choose a remedy that is safe, effective and, if possible, inexpensive. It goes without saying that one would hesitate to prescribe a local drug that might have neurotoxic actions or an antibiotic that by local application might sensitize a patient and thereby prevent later parenteral use of this same drug.

Naturally, the therapy of *any* condition becomes simpler and more rational when a correct diagnosis has been made. This means

taking a proper history and doing an adequate physical examination. In most instances, this also means getting the patient completely undressed, examining glabrous skin, mucous membranes, palpitating liver, spleen and lymph nodes. Skin diseases, it should be remembered, are frequently external signs of systemic disorders—and dermatology itself is merely a branch of internal medicine.

But diagnosis is beyond the scope of this paper and we shall only attempt to lay down certain general principles for the routine local management of the average patient. Much depends on the appearance of the dermatosis and the complaints of the patient—regardless of its etiology.

Let us, therefore, consider various local forms of treatment, their indications, contraindications and methods of using them. Insofar as possible, this will be done in outline form. Additional and more detailed suggestions may be found in Sulzberger's and Wolf's¹ excellent book or the article by Downing² and others.

Baths are one of the most efficient means of

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applying mild medication to the entire skin surface. They are cleansing, soothing, anti-pruritic and often have specific (anti-seborrheic, anti-parasitic, anti-eczematous) actions. Aged and debilitated individuals, or potentially syncopal patients should not, as a rule, take prolonged or excessively hot baths. A temperature of 95°-100° F. is usually agreeable and acceptable. A full length, adult bath usually contains 40-60 gallons of water. The following quantities of medicaments are based on these amounts of water:

- A. Colloidal Baths
 - Corn starch and baking soda, 1 cup of each.
 - 2. Aveeno, 1-2 cups.
- B. Potassium Permanganate, 1:10,000-1:-15,000 (about 1 teaspoon of the crystals).
- C. Tar, 1-2 oz. of Liquor Carbonis Detergens or AR-EX* or Almay* prepared tar baths (usually for chronic disorders, such as psoriasis, seborrhea, etc.).
- D. Lubricating, such as Lubath,* Oilated Aveeno.* etc.

Soaks and Wet Dressings

Soaks and particularly wet dressings constitute the most effective means of ridding the skin of crusts and debris. They help maintain adequate drainage of infected areas. They should be kept warm or cool, depending on the condition being treated. By virtue of preventing rapid changes in skin temperature, it is felt they act as analgesic and anti-pruritic agents. They soothe, are antiinflammatory and help bring medication to erosive and eczematous areas.

Commonly Used Solutions:

- 1. Normal or slightly hypertonic saline.
- 2. Burow's Solution, 1:16 to 1:32.
- 3. Potassium permanganate, 1:400 to 1:10,000.
- 4. Silver nitrate, 1/4-1/2 %.
- 5. Boric acid, saturated solution.

Directions for Preparing Wet Dressings:

a. Solutions for wet dressings should be prepared from clean tap (or sterile) water in clean vessels, (specific directions should be given the patient for the preparation of the particular solution they are to use).

Every wet dressing must be kept wet.
 Many failures result from neglect of this principle.

c. In making a wet dressing, use a soft piece of unstarched sheet, napkin, white shirting or pillow case, folded to six or eight thicknesses and cut to fit the area. Be liberal in both the amount of the solution and thickness of the cloth used. If gauze is used be sure it is of very fine mesh. Do not use cotton next to the skin.

d. Wring out the dressing in the solution to the point of being "sopping wet," but not "running."

e. Cover the wet dressing completely with oiled silk, rubber sheeting, wax paper, cellophane, plastic, etc., which should be bandaged or tied on. This should not be too bulky. This will help retain the moisture.

f. To keep the dressing wet, you may either pour solution over the wet dressing after removing the outer, protective covering. (this may be done only while the wet dressing itself is still wet) or, remove and reimmerse or completely change the entire dressing (the latter being the method of choice).

g. Do not pour solutions under one cover of the dressing, hoping to wet it and never pour the solution over the outside of a dressing which, through neglect, has become dry. The solution will not penetrate the dressing properly and evenly in this way.

Remember that there are no dermatological contra-indications to soaks, compresses and wet dressings.

Lotions

Lotions are liquids, usually having water or alcohol as their base. Their active ingredients are either in suspension, solution or both. They can be used in both localized and generalized dermatoses. They are conveniently applied and removed. For local areas, they may be daubed on with the clean finger tips, a clean cloth or gauze sponge. Over widespread areas they may be applied with a small paint brush. Removal may be accomplished by *gentle* cleansing with sponges moistened in water, oil—or the use of baths and/or wet dressings or soaks. Vigorous cleansing may nullify all the salubrious effects of the lotion.

While the shake lotion is one of our most valuable topical remedies, it may occasionally be too drying or irritating. The color of the deposit left behind, after drying, may be cosmetically distressing to the ambulatory patient during the day. The use of Neutracolor* or other tinting agents has largely overcome this disadvantage.

Various active ingredients may be incorporated in lotions, as well as in liniments, ointments, etc. These will be discussed later.

The simpler the solution is, the better. An example:

Zinc oxide		
Tale	aa	20.00
Glycerine		15.00
Water q.s.	ad	120.00

Emulsions or Liniments

One of the better definitions of an emulsion or liniment is found in Sulzberger's and Wolfe's¹ book. They state these are "oily or fatty substances emulsified and suspended in an acqueous or other liquid, or aqueous solutions suspended in an oil medium."

These constitute the transition form of local application between the very drying lotions and the lubricating ointments. They have been markedly improved in recent years by the incorporation of wetting agents or detergents as emusifiers (e.g., Tween 80, Surfactol, etc.).

Again, various active ingredients may be incorporated. An example (Calamine Liniment, N.F.):

Prepared Calamine		
Zinc oxide powder	aa	8.00
Olive oil		50.00
Lime water q.s.	ad	100.00

Tinctures are composed of active ingredients dissolved in organic solvents, such as alcohol, ether or chloroform. They are very useful in treating localized areas, are easy to apply and, in general, are less messy than other topically applied remedies.

Examples: Tincture of Gentian Violet, Tincture of Iodine, etc.

Ointments

An ointment (or salve) consists of two parts: the base and the incorporated medicaments. From time immemorial, the animal and vegetable fats have been used (such as lard, goose grease, wool fat, cocoa butter). However, these become rancid, malodorous and have no great resistance to bacterial growth. Less objectionable in these respects, are the mineral bases (paraffin, petrolatum). Nonetheless, the animal fats can hold large quantities of water, permitting the incorporation of water soluble medicaments-a decided advantage. The newer synthetic bases (polyethylene glycol and creams prepared by the addition of emulsifying agents have the combined advantages of not becoming rancid and holding large quantities of water.

Ointments in general have a tendency to macerate the skin (hence penetrate), contact the skin more intimately and soften it, more readily than other topical preparations. Therefore, they are invaluable in many dermatoses, especially the chronic, thickened, scaling stages of psoriasis, seborrhea, eczema and ringworm.

While the water soluble or water miscible bases are extremely useful in treating hairy areas, all ointments have a greater or lesser tendency to produce folliculitis. This must be watched for—and avoided. Moreover, ointments are "messy." They should not be used in oozing areas where the greasy layer impairs exudation and evaporation at the surface of the skin. Powder may be added to an ointment base up to fifty percent of its total weight. It is then called a paste and has a marked drying effect. Examples of ointment bases:

- Hydrophilic Petrolatum, U.S.P., Aquaphor* (Duke), Qualatum* (Almay).
- 2. Petrolatum (album or flavum).
- 3. Zinc oxide ointment, slightly drying.
- 4. Water-miscible ointment:

Carbowax 4000ⁿ 45.00

Propylene glycol 10.00 Water 25.00

Example of a paste (Lassar's):

Zinc oxide

Starch aa 15.00 Pet. flavum 30.00

Active Ingredients

In the foregoing discussion of the more commonly used forms of externally applied medications we have also mentioned some of the effects they produce. However, there are many active substances which may be incorporated (either alone or in combination) in the previously discussed lotions, liniments, ointments or pastes. Not all can possibly be listed in a paper of this type. Care must be exercised in choosing these substances. Thus, there are certain known incompatibilities, e.g. sulfur and mercury should never be prescribed together, nor should mercury be prescribed locally for any patient receiving iodides in any form. Moreover, Anthralin,* chrysarobin and occasionally resorcin3 stain the skin in a cosmetically distressing fashion about the face and neck and may also produce severe conjunctivitis. Certain tars and sulfonamides cause a marked photosensitization. Locally applied sulpha drugs and penicillin may produce an allergic sensitivity in an individual which may preclude the future parenteral use of these drugs. And so the list of incompatibilities and potential allergic sensitizers might be multiplied many times over. Reference to standard texts in the field of Dermatology will discuss these points at greater length and in more detail.

The following list includes some of the more commonly used active substances and their principal local effects.

- A. ANTIPRURITIC AGENTS.
 - 1. Menthol, 1/4-1/2 %.
 - 2. Phenol, 1/4-2%.
 - 3. Camphor, 1-3%.
 - Anti-histaminics (not as effective locally as they were once thought to be).
 - Local anesthetics (such as benzocaine, nupercaine, eurax, quotane,

- etc.), not uncommonly allergic sensitizers.
- 6. Steroids.
- B. KERATOLYTICS, which tend to remove or decrease the thickness of the horny layer.
 - 1. Salicylic acid, 3-10%.
 - 2. Resorcin, 2-15%.
 - 3. Chrysarobin, 1/10-10%.
 - 4. Anthralin, 1/10-5%.
 - 5. Trichloracetic acid, full strength.

C. ANTIPARASITICS and ANTISEPTICS.

- Kwell,ⁿ Topocide,ⁿ Gexane,ⁿ etc. (for the treatment of scabies, lice, etc.).
- 2. Mercurials, 1-10%.
- 3. Sulfur precipitate, 1-10%.
- Hexachloraphene and other new antiseptics.
- Antibiotic ointments, lotions, solutions, etc., the selection depending chiefly on bacterial sensitivity (laboratory tests) and allergic susceptibility of the host skin.

D. ANTI-ECZEMATOUS AGENTS.

Many agents are "anti-eczematous" and are used in the treatment of eczematoid eruptions. For practical purposes their actions are varied and many substances have already been discussed.

Some act by cleansing, others by their antipruritic effects; some by their keratolytic effect; and some in still other ways.

A brief listing is presented of some of these more commonly used agents, ranging from the mildest, bland preparations to be used in the acute weeping stages, through substances used in the subacute phases of an eruption, and finally the more potent medicaments that should primarily be used in thickened, chronic lesions.

- 1. Wet dressings-see Section II.
- 2. Antiprurities-see Section VII.
- 3. Tars and tar-like substances.
 - a. Ichthyol, 8 1-10%.
 - b. Liquor carbonis detergens, 1-10%.
 - c. Crude coal tar or more refined tars (e.g. Zetar), 1-10%.

- 4. Reducing or keratolytic agents.
 - a. Chrysarobin, 1/10-10%.
 - b. Anthralin, 1/10-5%.
 - c. Salicylic acid, 3-10%.
- 5. The Quinones and Hydroquinones.
 - a. Vioform, 8 1-3%.
 - b. Diodoquin, 8 1-3%.
- Steroids, primarily anti-inflammatory, often anti-pruritic.

Discussion

The above listings of various agents is obviously incomplete. There has been no mention of detergents, bleaching agents, very little mention of powders, caustic agents, poultices and a host of many other topical medicaments. In many instances the above mentioned active agents may be combined in a useful manner. For example, an anti-eczematous and keratolytic agent in chronic, thickened lesions or an antipruritic and drying agent in itching, oozing disorders.

Only passing mention has been made of the incompatibilities which should be avoided and of the unpleasant and occasionally dangerous allergic potentialities of some of these drugs. However, we do hope that we have been able to point out and emphasize many practical points, the most important of which is that we can often start treating an eruption on the basis of its observed characteristics while we keep trying to make a definite diagnosis (on the basis of an adequate history, physical examination and possible laboratory studies.)

In general, the more acute the eruption (characterized by weeping, oozing, vesicular lesions), the more bland and soothing should be your topical treatment, viz., baths and wet dressings. As the eruption becomes subacute, lotions and liniments may be indicated. For the more torpid, chronic, crusted lesions ointments are the initial topical agent of choice. Many of the listed "active ingredients" may be incorporated in the above mentioned vehicles, either singly or in combination, depending on the effect desired.

Most important of all, one should familiarize oneself with a limited number of topical remedies, learn how to use them and what they will do.

Summary

- 1. Make a definite diagnosis as soon as possible.
- Proper treatment frequently logically follows this; both topical and parenteral.
- 2. The choice of topical therapy is often determined by the presenting stage and site of the eruption.
 - 3. Use few remendies and know them.
- 4. Begin with the mildest and observe the results. Move to stronger medications from there.
- 5. Remember the allergic eczematous hypersensitivities and incompatibilities.
- 6. The mode of application and removal of topical remedies often spells the difference between success and failure.

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Gynecology for the General Physician

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Many patients are referred to specialists with conditions which could be treated by the general physician. Some general physicians who treat these conditions and do not get good results, do so without the sound application of known basic principles.

In our clinic many patients are referred with conditions that require no special training or skill for their diagnosis or treatment. The author has chosen several of these conditions for this discussion, in the hopes that it will attract the attention of those general physicians who can devote the little time necessary to setting up these procedures for diagnosis and treatment. None of these are new. All have been described previously. Many of the descriptions, however, appear in specialists journals. Some are written in obtuse medical phraseology and often the practical aspects of the information are not pointed out.

Functional Uterine Bleeding

This is one of the most common gynecologic conditions, causing a patient to seek medical aid. The cause of this disorder is unknown. There are apparently several separate entities, all called functional uterine bleeding. To increase the success of treatment one must first know what he is treating. The mere history of abnormal bleeding with a negative pelvic examination is not enough. What other aids are available?

ENDOMETRIAL BIOPSY. This is preferably taken on the first day of the bleeding or early in an abnormal bleeding period. It tells the physician the kind of endometrium from which bleeding is occurring. This, in turn, suggests the type and amount of ovarian function.

The technique of obtaining an endometrial biopsy is not difficult. The patient is first examined to determine whether anteversion or retroversion exists in order that the biopsy curette may be directed in the proper direction. The cervix around the external os is painted with tincture of iodine. This is removed with ordinary rubbing alcohol and a uterine probe inserted in the proper direction to ascertain the direction of the uterine cavity, and to make sure that there are no gross obstructions within the canal or at the internal os. Attach a syringe to either a Randall or Novak endometrial suction curette and insert to the fundus. Pull out the barrel of the syringe and at the same time bring the curette down the anterior surface of the uterus to about the internal os with a scrapping motion. With continued gentle suction on the barrel of the syringe, gently disengage the curette and withdraw through the cervical os. There should be a good piece of endometrium within the tube of the suction curette. This

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should be forced through the tube into ten percent formalin solution and examined for type and quality of endometrial response. The technique for this procedure is available in any of the good texts related to office gynecology.

The following endometrial types may be obtained.

A. Hyperplastic or proliferative with no evidence of secretory activity. This means no ovulation, no corpus luteum, so called anovulatory bleeding.

B. Atrophic—No proliferative or secretory activity. This means either no ovarian function or that the endometrium is unresponsive to the ovarian hormones.

C. Mixed proliferative and secretory. This is so-called irregular shedding of the endometrium. The causes are not definitely known, but are apparently related to presence of areas of immature endometrium, capable of responding to estrogen, but not to progesterone.

D. Decidual or pseudo-decidual reaction. This usually means either a persistent corpus luteum or an early pregnancy.

Many forms of treatment for the conditions mentioned above have been discussed. Rather than try all forms in a haphazard manner, it is best to decide on one fairly successful type of treatment which has a physiological basis and stick to it, at least for a period of time.

A. Anovulatory Bleeding. None of the treatments for anovulatory bleeding are completely successful. It a woman has always had anovulatory bleeding, there is probably no treatment which will cause her to ovulate. If the present bleeding is merely an episode in an otherwise normally menstruating woman, treatment is much more successful:

1. If bleeding is at two-week or more intervals, 125 mgms, of the depo-type of progesterone on the twelfth day of the cycle or oral progesterone from about the twelfth to the twenty-first day of the cycle is of much value.

2. If the menstrual interval is fairly long or normal, but the flow is very heavy or long, intramuscular progesterone, 25 to 50 mgms. on the twentieth to the twenty-second day of the cycle is usually successful.

3. If the periods are grossly irregular with only a few days interval, 50 to 100 mgms. of progesterone intramuscularly would usually be followed by a rather heavy bleeding period which is caused by shedding of the hyperplastic endometrium. This is the so-called medical D and C. Following this heavy period the patient is apt to have normal intervals and normal periods.

An alternative treatment consists of large doses of estrogen by the intravenous route, followed by decreasing doses of oral estrogen over the next two to three weeks. This method is particularly effective in the patient who is seen after a long period of bleeding or during a heavy period of bleeding.

B. If atrophic endometrium occurs during the childbearing age, it is probably best to send the patient to a gynecologist or endocrinologist since treatment by simple hormone stimulation of the endometrium is not the answer, and usually not successful.

C. The mixed type of endometrium found with irregular shedding of the endometrium is difficult to treat medically. A D and C is the best treatment for the immediate difficulty; however, this does not afford permanent relief. There is really no known permanent cure for this.

D. The treatment of persistent corpus luteum is not altogether successful, but large doses of estrogen administered intravenously, or orally, or a D and C are usually effective in breaking up the pituitary-ovarian axis which is not functioning cyclically.

As stated before, there is practically no effective treatment for long-standing anovulatory bleeding. If anovulatory cycles are sporadic, small doses of thyroid extract given daily will often help. Small doses of diethylstilbesterol (.2 mgms. daily) in regular twenty-day-cycles starting on the third day of each period will often cause ovulation.

It must be remembered that if a short period of medical treatment is not effective in controlling abnormal bleeding, a D and C must be done to rule out other conditions such as carcinoma and endometrial polyps. At the time

of the D and C a good pelvic examination can be done when the patient is under anesthesia.

Cervical Mucous Smears

This is a simple procedure which requires no training to obtain the specimen and no special skills to read the slide. It is not accurate in the presence of blood. The smear is obtained by a small cotton applicator on a stick, just within the external and cervical os and spreading the material so obtained on a clean dry slide. This should dry for several minutes. One looks for crystals in the shape of ferns or palm leaves. Slanting light is the best and they can be seen well under low power. Good crystals mean presence of estrogen with little or no progesterone. No crystals means either good levels of progesterone and estrogen or absence of estrogen. In a normal menstrual cycle, crystals are absent immediately post-menstrually but increase in amount and size to the time of ovulation. They then decrease in amount and size until they are absent just before the period.

Crystallization of the cervical mucus is useful in following the hormonal picture on successive days through abnormal cycles. It is also useful in anovulatory amenorrhea which is, after all, a form of functional disorder. For instance, if smears are taken several times during a menstrual cycle, it is normal to find crystals building up to a maximum at about the time ovulation would occur. If these persist and well-developed crystals are present premenstrually, the patient has not ovulated.

In amenorrhea, the presence of well-developed crystals rules out pregnancy rather conclusively. It also rules out persistent corpus luteum. It makes quite probable the diagnosis of persistent functioning follicle cysts of the ovary as the cause of the amenorrhea. If no crystals are found in amenorrhea then one must suspect pregnancy, persistent corpus luteum, or non-functioning ovaries. Crystallization of the cervical mucus may be utilized in performing a simple but accurate pregnancy test in the following manner: In the patient having amenorrhea if no crystals are seen, a dose of 2 mgms. or 20,000 units of estrogenic substance is given

intravenously or intramuscularly. A mucous smear is repeated in two or three days. If there is still no crystallization, this is a positive test since pregnancy is the only condition known to the author which will prevent crystallization of the mucous with this much estrogen stimulation. If there are crystals following the estrogen, the patient either is not pregnant or has a pregnancy in which there is some defect in progesterone production, and the patient is apt to abort.

In the treatment of functional uterine bleeding, several things should be kept in mind. When endometrial biopsy is contemplated, one should be fairly certain that a pregnancy is not present. Carcinoma must be ruled out in all instances of abnormal bleeding where a reasonable period of medical treatment does not furnish a cure. Most sporadic cases of functional uterine bleeding are self-limited and clear up with or without treatment. Emotional stress is important in the causation and treatment of functional bleeding. Often rest, sedation and hot prolonged douches are an effective treatment.

Urethral Stricture

This condition is usually associated with chronic urethritis and often with chronic trigonitis. It is common in the multipara who is past thirty. It is a common cause of pelvic pain. Usually this pain is not associated with voiding nor is it the typical pain of a urinary tract disturbance. It is almost always associated with urinary frequency. In the chronic stage it is almost never associated with pyuria. A hypothetical case follows, which illustrates most of the signs and symptoms usually present.

A multiparous woman over the age of thirty years presents herself complaining of bilateral lower quadrant pains which are worse on long standing or when she is overtired. She also has a heavy bearing down sensation in the pelvis. Frequency and nocturia are quite bothersome. She may have seen several other physicians and received treatment for pelvic inflammatory disease, cystic ovaries, cervicitis, or other pelvic conditions. On examination the urethra is noted

to be thick and quite tender, particularly in its posterior portion. The urine is negative. She may have a urethral "caruncle."

Treatment consists of dilating the urethra with graduated female dilators up to No. 28 French, if possible. During the procedure one should watch for whitening around the external meatus which indicates that no further dilation should be done at this time. Severe pain or bleeding indicates that the procedure should be stopped. If chronic urethritis with stricture has been the cause of the pelvic discomfort the patient will notice significant relief in a few days following treatment. It may be necessary to repeat this at two- to four-week intervals until No. 28 French can be reached or until the patient experiences more or less permanent relief. Dilation, of course, does not guarantee permanent relief but will often give the patient many months of comfort. Usually the treatment of urethral stricture produces a satisfied patient. Many of these women have had several rounds of unsuccessful diagnosis and treatment before proper therapy is insti-

So-called urethral caruncle is misunderstood by many people. It is not a true caruncle. It is really an eversion of the urethra. It is usually due to an accompanying urethritis with stricture. External applications and treatments are of little value. Treatment of the stricture is the best treatment for the eversion.

Pelvic Congestion

The exact cause of pelvic congestion is unknown. Many people refuse to admit its existence and many have never heard of it. There is one thing certain, however, a name must be given to the symptoms which fall into the classification of pelvic congestion. Into this classification fall many patients who are incorrectly diagnosed as having pelvic inflammatory diseases (P.I.D.). This diagnosis is proven incorrect when the patient is unnecessarily operated upon and no particular abnormality found. Often uterine suspensions are done. Small follicle cysts of the ovaries are resected and other meddling types of surgery done

because nothing else is found in the pelvis.

The etiology of pelvic congestion is not exactly known. It is a vascular phenomena, apparently, associated with increased blood flow through the pelvic arteries and perhaps some stasis in the pelvic veins and lymphatics. The etiology may overlap that of premenstrual tension.

The most outstanding symptom is bilateral lower quadrant pain which is accentuated by long standing, lifting, menstrual periods, intercourse, or emotional upset. This is most commonly seen in the thirty-five to forty-five year age group in multigravida. The incidence of spontaneous abortions is higher than in a normal group. Many complain of a heavy dragging sensation in the pelvis and a feeling of pressure on the perineum. Menorrhagia is a common accompaniment. Apparently retroversion and pelvic relaxations produce exacerbations of the condition.

On examination, the uterus is usually found to be somewhat larger than would be expected, has a firm fibrotic consistency, and is tender to palpation. The adnexae are tender despite the absence of masses. A sensation of general fullness is noted in the adnexae. One of the most outstanding symptoms is tenderness in the region of the sacro-uterine ligaments in the cul-de-sac. The etiology may overlap with that of premenstrual tension. Therefore, premenstrual abdominal bloating, headache, nausea and depression may also be a part of the picture.

Pelvic congestion is probably the result of several different factors:

- It is known that estrogen, under certain conditions, causes dilation of blood vessels, increase in transudate, and the retention of sodium and fluid within the tissues;
- 2. Pelvic relaxations and retroversions can mechanically disturb the normal blood flow in the pelvis, causing stasis. This action is enhanced by long standing, overwork, or sexual intercourse:
- 3. It is known that pelvic blood flow is increased by emotional upsets and chronic tension states particularly in the patient who

is somewhat emotionally unstable.

Treatment of pelvic congestion should be concerned with the factors which are thought to cause congestion.

- A vaginal pessary and knee-chest exercises will help to avoid mechanical congestion.
- Dehydration by limiting sodium and fluid intake or the use of diuretics will help to avoid the accumulation of tissue fluid regardless of the cause.
- 3. Male hormone often antagonizes the fluid-accumulating tendency of estrogen.
- Psychotherapy would aid in decreasing pelvic congestion associated with emotionally unstable women in chronic tension states.

If premenstrual tension is a prominent part of the picture, the dehydration and diuretics and possibly the male hormones should be of increased value. Only surgery would correct significant pelvic relaxations. The wearing of a pessary serves as a good test as to whether or not repair by surgery would be of value. It is evident that menstrual function has something to do with these symptoms as they rapidly disappear after the menopause, and practically never start after the menopause.

Urinary Incontinence

Patients are usually sent to the gynecologist for vaginal repair because of incontinence. On close questioning it is found that some are not stress incontinence. There are two main types of urinary incontinence which can be determined usually by history alone. The main type is stress incontinence in which urine is lost only when the patient increase intra-abdominal pressure such as lifting, coughing, sneezing, walking upstairs, and laughing. This type of incontinence is due to a loss of normal anatomical relationships around the base of the bladder and the urethra. It can be helped by surgical repair of these tissues. A second important type of incontinence is urgency incontinence. When the patient experiences a desire to void she must do so immediately or she is apt to lose urine. This indicates urologic disease of some type, usually inflammation. Very often the disturbance is chronic urethritis,

trigonitis, or urethral stricture. Surgical repair is no guarantee of improvement for this type of incontinence. A third, less common type of incontinence is that associated with a neurological lesion. This is usually characterized by marked changes in bladder capacity and residual urine.

Bleeding in the Puerperium

There are four main types of bleeding in the puerperium classified according to amount and type of bleeding. First is the immediate sudden alarming hemorrhage occurring very shortly after the delivery. This will not be considered here. The second type may occur at anytime from a few days to two to three weeks postpartum. It is often sudden in onset, large in amount. The patient may lose enough blood to go into shock. This is almost always due to retained placenta parts. There should be no procrastination with this type of bleeding even though it is not enough to put the patient in shock. The patient should be immediately hospitalized and prepared for evacuation of the uterus. The third type is slow, more or less steady bleeding accompanied by backache and usually lower abdominal cramps and heaviness. It is made worse by long standing, lifting, etc. This is usually due to sub-involution of the postpartum uterus and is frequently seen in postpartum retroversions of the uterus.

Physical examination reveals a large, boggy uterus which is tender, and is often retroverted. Successful treatment includes increased rest, postural exercises (knee-chest), and oxytocic drugs. The fourth type bleeding is slow, more or less steady, and may be aggravated by long standing, but pain and heaviness in the abdomen are absent. On examination the uterus is normal in size and it is not commonly retroverted. The reason for this type of bleeding is thought to be subinvolution of the placental site. The site of attachment of the placenta has not been covered over by clots or endometrium, and bleeding continues from some of the exposed vessels. Moderate doses of estrogen will usually stop this bleeding in a few days.

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With infants and children, the potentially harmful effects of persistent vomiting are greater than with adults. As Vaughan¹ points out: "Even in health the requirements for water, electrolytes, protein, calories and vitamins are relatively greater in children than in adults. Water constitutes a greater proportion of the body of the child, and his daily turnover of fluid is greater. Infections, which bring about increased losses of water, are more common in childhood, and the body responses to them are more violent. Therefore, in pediatric practice, maintenance or restoration of normal fluid and electrolyte balance often overshadows specific therapy in importance."

The mechanism of control of emesis is imperfectly known but is generally attributed to a suppression of activity of the medullary vomiting center or of the chemoreceptor trigger zone in the floor of the fourth ventricle. Since 1946, when diphenhydramine was synthesized, a large number of antiemetic agents have been developed. Two groups are widely used at the present time: a piperazine series, including such agents as meclizine and cyclizine; and a phenothiazine series, including chlorpromazine and promethazine.

Possibly both groups of drugs act to depress the medullary vomiting center. The piperazines seem, in addition, to decrease vestibular sensitivity and are generally effective against motor sickness and the nausea and vomiting associated with labyrinthine and vestibular dysfunction, vertigo, Meniere's disease, and radiation sickness. ^{2, 3} Chlorpromazine, the earliest of the phenothiazines to be developed, is highly active in its effect on the autonomic nervous system, where it functions as an adrenergic blocking agent. It is effective in controlling emesis produced by drugs, infections, carcinomatosis, uremia, and certain post-operative conditions. ²

Prochlorperazine (Compazine®)*, the subject of the present study, is a recently introduced phenothiazine derivative. Laboratory observations indicated that it had five times the antiemetic potency of chlorpromazine in equivalent dosages.³ At the same time, it showed less adrenergic blocking and, consequently, less hy-

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Compazine, 2-chloro-10-3-(1-methyl-4-piperazine-propyl)-phenothiazine, Smith Kline & French Laboratories Philadelphia I, Pennsylvania,

potensive effect than chlorpromazine. Clinical studies have largely confirmed the laboratory findings. For example, Friend and McLemore⁴ reported that prochlorperazine provided good or excellent relief in over ninety percent of patients suffering nausea and vomiting of various etiologies. The complete absence of blood dyscrasias or other serious side effects in the studies so far reported and the demonstration of the drug's effectiveness in relatively small doses^{6, 4} prompted me to evaluate this agent in combatting nausea and vomiting in pediatric patients.

Material and Method

Thirty-eight pediatric outpatients (20 male, 18 female) were treated with prochlorperazine for nausea and—more especially—vomiting of various etiologies, most of the disorders being acute infections of the upper respiratory or gastrointestinal tract. The age span was eight months to eleven years. For thirty-five patients, the symptomatology included moderate to severe vomiting for periods of twelve hours to four days prior to treatment, usually with fever and dehydration, and often with abdominal pain. Three patients had nausea without vomiting.

Prochlorperazine was administered in syrup form to thirty-three patients and as a suppository to five patients. Daily dosage for infants and children under four years of age varied from 5 mgms. to 15 mgms. in divided oral doses or as suppositories. Older children received 15 mgms. to 40 mgms. daily in divided amounts. the most frequent schedule being one teaspoon. (containing 5 mgms. prochlorperazine) every six hours. Approximately one-third of the group received concomitant antibiotic therapy (usually penicillin). Sulfonamides, antihistamines, and antitussives were given in a few instances. Parents were encouraged to continue the patients on normal diets and intake of fluids.

For each patient we prepared an individual case form, recording dosage schedule, concomitant therapy, side effects, efficacy and duration of treatment, and comments. Since most of the symptom complexes were relatively mild and self-limiting, the grading of results was

largely based on the rapidity of response and the degree and frequency of side effects. An "excellent" rating indicated that vomiting and nausea were eliminated with the first dose of prochlorperazine, the child was able to resume a normal diet without precipitating further vomiting, and no untoward effects of the therapy developed. A "good" rating indicated more gradual control of nausea and vomiting (but within three days) and no complications or side "Equivocal" results were indicated when nausea-vomiting ceased only after three days (by which time the symptoms for many of these patients would have run their course in any event) or when control was only partial. "Poor" results were indicated if nausea and vomiting were not controlled or adverse effects of the drug therapy developed.

Results

Responses were excellent in twenty-three patients (60.5%), good in nine patients (23.7%), equivocal in four patients (10.5%), and poor in two patients (5.3%). The therapy was especially effective for acute gastroenteritis, the most common disorder encountered in the study, involving fifty percent of the patients; thirteen of these eighteen patients here (72%) showed excellent response, and an additional five (28%) showed good response.

The results thus indicate that 84.2% derived definite benefits (good to excellent response) from prochlorperazine. For 58%, a single oral dose or suppository sufficed to eliminate nausea and vomiting. However, in many of these patients, the parents chose to continue the child on the medication through two or three days "as a safety measure." No antagonism to antibiotics or other primary medications was evident.

In two patients, emotional tension had produced gastroenterospasm with emesis. While the patients were on prochlorperazine, the tension was reduced and the vomiting controlled, but the discontinuance of the drug resulted in a recurrence of symptoms, and prochlorperazine therapy had to be reinstituted and continued until the underlying problem disappeared. The

problem in one case concerned the child's anxiety while waiting for the opening of school; when that crisis passed, he quickly became well. Equivocal results occurred in four patients. In two patients, vomiting was associated with paroxysmal coughing and was only partially controlled. In the third child, a slight urticaria developed on the second day of treatment, coincidental with the control of emesis. The urticaria disappeared promptly with the withdrawal of the drug. The final patient in this group presented an unusual situation. A four-year-old girl with an acute upper respiratory infection had experienced post-prandial vomiting for four days prior to treatment. One teaspoonful (5 mgms. prochlorperazine) every six hours was prescribed, but the patient's mother, misunderstanding the directions, gave her three teaspoonsful every three hours. The mistake was discovered on the next day, but by that time the child had received 135 mgms. of prochlorperazine over a twenty-seven-hour period. Slight lethargy, stiffness in the region of the trapezius muscle, and moderate opisthotonus developed. These were the typical extrapyramidal symptoms which develop from massive doses of central nervous system depressants, but they were surprisingly mild here, considering the age of the child and the amount of drug. Given parenteral fluids, the child became completely well within a day after the withdrawal of the drug.

Poor responses occurred in two patients. One was a nine-year-old boy with an upper respiratory infection, who was receiving antibiotics and sulfonamides along with 40 mgms. of prochlorperazine per day. He experienced extrapyramidal symptoms, characterized by several opisthotonic epidodes and by pain in the neck and back. This reaction was not too unusual in a nine-year-old receiving 40 mgms.

per day, which was the upper dosage limit prescribed for the children in this study. But curiously, the opisthotonus was more severe than in the patient described above, even though the dosage was much lower.

The second poor response involved a sevenyear-old girl with cerebral palsy, exposed to pertussis. Vomiting associated with severe coughing was not noticeably affected by prochlorperazine.

Discussion and Comment

In the present investigation, we found prochlorperazine to be not only symptomatically effective as an antiemetic agent in the majority of patients (84.2%), but also to be of value in their overall management. Presumably because patients' anxiety and tension were reduced, acceptance of concomitant therapy, including bed-rest, was improved and the duration of the primary disease thereby shortened. Of considerable value, also, was the fact that the antiemetic action of prochlorperazine often offset the emesis so often experienced by children subjected to antibiotics.

These beneficial results of prochlorperazine were associated with a wide margin of safety. No complications or extensions of the infection were seen in any of the children suffering from acute febrile diseases. No adverse side effects developed, except for slight urticaria in one patient, which cleared spontaneously, and mild to moderate extrapyramidal symptoms in two patients, which were due in one instance to accidental overdosage and which disappeared promptly in both instances after the withdrawal of the drug. Mild drowsiness, experienced by 55% of the patients, was a desirable effect in these conditions. The drug was easily administered, effective in small doses, and well tolerated.

Summary

Prochlorperazine (Compazine®) in syrup or suppository form was given to thirty-eight children suffering from nausea and vomiting of various etiologies, principally acute respiratory and gastrointestinal infections. It was highly effective in eliminating nausea and vomiting and maintained its antiemetic potency while antibiotics and sulfonamides were being administered. It was most effective in controlling emesis accompanying infectious disease. Adverse effects were infrequent, mild, and rever-

sible. Based on this study, therefore, prochlorperazine can be said to be a safe, and effective antiemetic for pediatric practice.

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NOSE-BLEEDING AND HIGH BLOOD PRESSURE

"Seventeen patients (4.5%) from a group of 374 with high blood pressure had bled from the nose, and in 8 of these this was the presenting symptom. It is likely that these findings are an underestimate of the true frequency of epistaxis in these patients. Attention is drawn to the occurrence of gutbleeding, in the absence of discoverable gastrointestinal disease, in this group.

Thirty-two patients with nasal disease who were admitted to hospital because of nose-bleeding showed a normal distribution of age- and sex-adjusted diastolic scores. Eighty-nine patients without local nasal disease had an age- and sex-adjusted score distribution totally different from that of the general population.

Nose-bleeding, in the absence of local nasal disease, is therefore associated with high blood pressure."

J. R. A. MITCHELL British Medical Journal (1959) 1, 27

First Case:

Patent Ductus Arteriosus

Second Case:

Pernicious Anemia

D_R. P. H. Long (CHAIRMAN): The first patient this morning is Mr. K. S. from Ward A-62, who has a patent ductus arteriosus, and whose case record will be presented by Dr. Hecht.

CASE ONE: MR. K. S.
Patent Ductus Arteriosus
Presentation: Dr. A. Hecht
Discussion: Dr. H. Ruskin

DR. HECHT: This is the first Kings County Hospital admission of a 20-year-old Norwegian boy who was admitted for evaluation and treatment of a patent ductus arteriosus. The patient appeared to be a perfectly normal baby, but during childhood his development was somewhat retarded. He was always thin, pale, underweight, had frequent upper respiratory tract infections, was quite retarded in school, and could not keep up at play with the other children. However, he at no time was cyanotic, had no swelling of his extremities, no orthopnea, no dyspnea.

He came to the United States at the age of fourteen and at that time tried to obtain working papers, but was told, for the first time that he or his mother knew, that he had a heart murmur. At the age of fifteen he underwent an appendectomy without incident. At the age of sixteen he had swelling and pain of both knees and was admitted as a private patient to another hospital. The diagnosis of acute rheumatic fever was made. At that time, on admission, he was afebrile, as he was throughout the hospital course. The main positive findings then were a systolic and diastolic murmur with thrill at the apex, and a snapping M1. No cardiomegaly was noted. At that time the cardiogram was reported to be normal. Sedimentation rate was 1 mm., the white blood count was 5,100. The x-rays were said to be compatible with minimal right rheumatic valvular heart disease.

He was treated in the hospital for twenty days and was home for the rest of the year with varying doses of cortisone between 100 and 12.5 mgms. He did very well. Recently his family physician was not available; for one of his follow-up visits he went to see another physician who diagnosed the patent ductus arteriosus and referred him to the Kings County Hospital.

On admission the patient was a pale, thin, slender young man in no acute distress. He weighed 126 pounds and was 66 inches tall. His blood pressure was 118/60. The diastolic pressure dropped to zero on marked activity. He had a regular sinus rate of 68, and the main pertinent physical finding was a machinery-like murmur very typically located at the third intercostal space to the left of the sternum. He had no obvious cardiomegaly. His M1 was louder than M2 and we thought his A2 was equal to P2.

He was evaluated here, and most of the physicians thought this was a patent ductus arteriosus. X-rays were taken and revealed that there were no abnormalities of the great vessels, and he was referred to the chest surgeon. On the tenth day an operation was performed and a patent ductus about 1½ cm. was ligated and cut. The patient did very well postoperatively. His cardiac findings have changed so that instead of a machine-like murmur he now has an early decrescendo systolic murmur in the pulmonary area. His blood pressure is 126/80, and he feels quite well.

We present this patient as an uncomplicated patent ductus arteriosus cured by surgical methods.

Dr. Long: The patient is coming in. Will you bring the patient in? . . . Is your name typically Norwegian?

MR. K. S.: There is one letter less in Norwegian than in English, and therefore they added the other "a."

Dr. Long: This man is well, and that is what I would say to him about his heart now.

DR. DOCK: His voice is hoarse. Was it hoarse after the operation?

MR. K. S.: Yes.

DR. DOCK: Were you hoarse before the operation?

Mr. K. S.: Not so much.

DR. LONG: Thank you for coming ... There

is one very practical lesson to be learned from this patient's record, and that is, don't go on vacations and be absent from your office, because you may not ever see your patient again.

May we have the x-rays of this patient?

DR. KATZ: This is a representative film of the chest. The first thing we notice is that the vessels are somewhat increased in prominence in the right pericardiac area. There appear to be more vessels. The overall size of the heart is not enlarged either to the right or the left, not grossly enlarged. The pulmonary artery segment is prominent, but perhaps this is partially due to the patient's youth, in which this can be a feature. The striking finding is the aortic knob which appears to be rather prominent, long and enlarged. The esophagram shows that if you carry out the diameter of the aortic knob in the vertical direction the knob would be about so big and wouldn't be quite so long. Here it is unusually long and here you can see an indentation in the barium esophagram. The other striking thing is that there seems to be an extra hump in this border of the aorta. The bottom hump is supposed to be due to the infundibulum itself. So we have here a white shadow which is not enlarged that shows a prominent aorta with an infundibulum with prominent vascular nodules, the absence of a left atrium "reminder" or a right-sided "reminder." I think obviously that this is a patent

Dr. Long: Thank you, Dr. Katz . . . Dr. Ruskin, will you continue, please.

DR. RUSKIN: It is interesting to me that this patient should have been chosen for the conference. I think at least one of the possible reasons is the fact that we now very seldom see uncomplicated instances of patent ductus in the wards dealing with adult patients. Twenty years or even less, even more recently, one certainly saw this lesion much more commonly and the answer is obvious, for the recent scarcity of this type of case is due to the fact that most of them are now seen and recognized at earlier ages and are being operated upon.

As far as this patient is concerned, he presented all the classical features of the uncomplicated patent ductus. He was relatively asymptomatic apart from a number of features which, as Dr. Hecht pointed out, were largely "iatrogenic." He did have some palpitation. He did have a certain amount of cardiac awareness, but otherwise there were no cardiac symptoms.

We were unable to explain his illness of several years ago when his knees became swollen, but certainly there is no evidence now that he had rheumatic carditis, that he had been left with any sequelae of such an illness. I understand from Dr. Hecht that his hoarseness is of very recent origin. In other words, he was not hoarse immediately after operation so that the possibility of some damage to the recurrent laryngeal nerve having been done is perhaps a little less likely.

The characteristic features of this congenital abnormality are based upon the presence of a shunt from the greater circulation into the lesser and give rise to the features which were demonstrated here. He has, as was stated, a rather typical continuous murmur which has been likened to the noise made by machinery which goes through systole and diastole near the base of the heart on the left side. It is often accompanied by a thrill, although this is not always present. Along with it there is an increase in pulse pressure which can be further widened by means of exercise.

The electrocardiogram in patients without complications is normal, but where the shunt is moderate or more severe the left side of the heart has to do more work, and therefore finally evidence of left ventricular hypertrophy may appear both in the cardiograph and on x-ray.

Complications of this disorder are mainly subacute bacterial endocarditis which, in spite of present therapy, may occasionally be fatal, cardiac failure in later years, and occasionally the formation of increased pressure within the lesser circuit which in turn causes further complications. For these reasons and because the average life expectancy is considerably reduced, it is said to be only thirty-five years in all cases put together, one now advises ligation and division of the ductus, usually in late childhood or

early adolescence. However, one can operate at a later age, and many adults have had this operation performed successfully.

Just a word about patients having an atypical ductus. These patients are completely different as a rule, in that they are symptomatic. They are sick people. The atypical ductus can be complicated by other congenital abnormalities or it may be largely due to the fact that pulconary hypertension is present which gives rise to the very severe clinical picture. Such people are frequently cyanosed, they are breathless, complain of palpitations, and their hearts may fail under these circumstances. In the study of the typical case it is usually unnecessary to do catheterization or angiocardiography because of the absolutely classical nature of this disorder, but in atypical cases where pulmonary hypertension is suspected, it is essential that catheterization be carried out, because the risk at operation is completely different. In the uncomplicated case, the risk today is perhaps in the region of one-half of one percent whereas in patients complicated by hypertension or other congenital abnormalities the risk may approach fifty percent.

DR. LONG: Thank you very much, Dr. Ruskin...Our next case is a 97-year-old male from the first medical division, Ward A-61. The case record of pernicious anemia will be presented by Dr. Laria.

CASE TWO: MR. J. L.
Pernicious Anemia
Presentation: Dr. S. Laria
Discussion: Dr. V. Ginsberg

DR. LARIA: This is the first admission to Kings County Hospital of a 97-year-old Negro male on January 14, 1958, who entered with the chief complaint of weakness. We obtained the information from the patient's son, because the patient was lethargic and unable to respond to questioning. The son stated that upon arrival at home the patient was found lying on the floor of his room. When helped to his feet it was found he was no longer able to stand. A physician was called to see the patient and

after his examination, felt that the patient had suffered a cerebral vascular accident and referred him to Kings County Hospital.

Prior to this time the patient had been ambulatory, able to feed himself, and oriented as to time, place and events. A review of systems revealed only that the patient had had hoarseness of three years' duration. The past history was non-contributory. The patient had never been attended by a physician in his entire lifetime nor complained of anything. He was born a slave in Virginia. There is no birth record, so his age cannot be substantiated.

The patient was a lethargic, well developed, well nourished Negro male who was comfortable. His blood pressure was 100 systolic over 60 diastolic. Pulse was 80 and regular, respiration 16 per minute, temperature 102 degrees Fahrenheit. Mucosa was pale, his eyes showed bilateral lenticular opacities. Ear, nose and throat examination was negative. Examination to investigate his hoarseness was not done at this time. Examination of the chest showed dullness at the left base with diminished breath sounds, no rales, and no rhonchi were present. The heart had a regular sinus rhythm with occasional premature ventricular contractions. and a Grade I apical systolic murmur was audible. No cardiac enlargement was noted. Examination of the genitalia revealed a left inguinal hernia.

Neurological examination was grossly negative and specifically vibratory sense, position sense, and pin prick sensation were all normal. However, there was some weakness of the left arm, and urinary incontinence was present. The rest of the physical examination was within normal limits.

Pertinent laboratory studies on admission: The patient had a BUN of 30 mg. percent, a repeated BUN was 13 mg. percent. Blood sugar was 100 mg. percent. VDRL was negative. Urinalysis negative. Stool guiacs were negative for occult blood. His electrolytes showed sodium to be 160 milliequivalents, potassium 4.8, chloride 115 milliequivalents. Liver function tests were within normal limits. His red blood count was 1,100,000, hemoglobin was 3.6

grams percent with a hematocrit of 15 percent. His mean corpuscular volume was 137. Mean corpuscular hemoglobin was 29.5. His mean hemoglobin concentration was 35. blood count done at the time of admission was 4,500 of which 44% were polymorphonuclear leukocytes, 54% lymphocytes, and 2% monocytes. Bone marrow aspirations showed marked megaloblast activity compatible with pernicious anemia. Gastric analysis showed no free hydrochloric acid after two hours, and stimulation with histamine. A Schilling test was done on a 48-hour urine specimen without intrinsic factor and showed a 3.3 percent excretion of radioactive vitamin B-12. A 48-hour urine specimen with intrinsic factor showed a 20.9 percent excretion of radioactive vitamin B-12. A blood culture was negative.

An x-ray of the chest showed a pneumonia of the left base which responded well to penicillin therapy. Another G.I. series was negative except for the prominence of mucosal folds, and the possibility of polyps could not be ruled out. Laryngoscopy done to investigate the cause of the patient's hoarseness showed a tumor of the right vocal cord with fixation. A biopsy taken of this showed it to be a squamous cell carcinoma. This is a graphic representation of the patient's course in the hospital. On the 16th of January, because the patient's condition was so poor, it was decided to transfuse him, and he received 500 cc. of sedimented red blood cells slowly over a six-hour period. Vitamin B-12 therapy 1000 micrograms daily was started on the 19th of January. An initial reticulocyte response was noted on January 22nd and reached its peak of fifteen percent on the fifth day of therapy. Mol-Iron® was started on February 1st. Patient continued to make good progress on this regimen. His latest indices are: A red blood count of 4,690,000, and hemoglobin of 11.5 grams percent, hematocrit 39 percent, mean corpuscular volume of 85, mean corpuscular hemoglobin of 25, and mean corpuscular hemoglobin concentration of 30 percent. His white blood count was 4,850 of which 41 per cent were polymorphonuclear leukocytes, 52 percent lymphocytes, 4 percent

monocytes, 3 percent eosinophils. His last bone marrow aspiration showed normal blastic activity.

The patient was subsequently transferred to H Building where he is undergoing radiation therapy for the carcinoma of the larynx. He is being maintained on 60 micrograms of vitamin B-12 weekly and two tablets of Mol Iron daily.

DR. LONG: Thank you for presenting this very interesting case record. The x-rays do not show anything . . . Dr. Ginsberg, you may continue.

Dr. GINSBERG: The patient is here.

Dr. Long: I didn't realize that the patient was here. I would like very much to see the patient . . . I'd like to have him sit up . . . Tell us how you feel this morning.

MR. J. L.: Feel fine.

DR. LONG: He feels very good, but you are hoarse. How long did you live in Virginia?

MR. J. L.: All my life.

DR. LONG: Where did you live in Virginia? MR. J. L.: Richmond.

DR. LONG: He is very old. There were no birth records in those days. I used to have a very good Negro boatman who took me fishing. He knew how old he was because he had another type of record. He told me he knew how old he was because, as he put it, "Miss Mary told me, 'George, you were ten years old on "Mannapation Day"."

Many of these very old people don't know how old they really are. This man may be 97. He was born a slave. He could be 100, however, or over.

Dr. GINSBERG: I would like to say that in discussing the man's history with the family and so on, he was a slave on a man's farm by the name of John Tyler and that he was quite a boy when Lincoln was president, so he must be over 100 years of age.

The patient is one of a group of patients that we presented in the last few months here. We presented three patients, one of whom had what looked like a megaloblastic marrow, and a chronic erythremic myelosis; a second patient who had a mal-absorption syndrome with a megaloblastic marrow, and this is the third who

has true Addisonian pernicious anemia with a megaloblastic marrow.

As old as he is, he seems to fit categorically into everything we know about pernicious anemia, and only four, five or six things which I picked out that would be important. As far as diagnosis is concerned, the patient had a hyperchromic macrocytic anemia, with no free hydrochloric acid, and a megaloblastic anemia, and, of course, the urinary excretion test was positive, so it is easy to say that this patient falls into the classification of pernicious anemia.

Now, the things which I thought I would bring up that would be of interest to us, are: first, his race. Pernicious anemia among Negroes is rather rare. In a series at the Johns Hopkins Hospital presented by Wintrobe, they had thirty-three Negroes among 329 patients in a hospital with a hospital admission rate of three whites to one Negro. At the Charity Hospital in New Orleans the ratio was one Negro to seven Caucasians, where the Negro admission rate was 45 percent of the total hospital rate. In Chicago at Cook County, the ratio was thirty-six Negroes compared to one hundred and seventy Caucasians per 100,000 admissions. I don't know what the ratio is in our hospital.

The second point that I would like to bring up is the fact of his age. The man is approximately one hundred years of age, and checking through the textbooks and some of the literature I couldn't find anybody reported at that age. Of course, I haven't met many people who have gotten into that age myself. It is a disease of the older-age group, reportedly over the age of forty, but there have been cases reported in their teens, and so, while it may occur in a very young person, it increases in frequency as we go along the scale in decades.

The third point which I want to bring up is that according to the report that we got from the x-ray department, and I don't know whether it is significant or not, whereas carcinoma as a concomitant of pernicious anemia occurs, the fact you could get marked rugae or polyps has not been reported very often, and according to our x-ray report the patient was supposed to

have marked rugae and possibly polyps with this disease.

The next point that I thought would be of interest is that while it is reported that in general the neurological examination was normal, this patient has weakness of extremities and bladder incontinence. I thought I would stress that.

Next, I thought I would mention the fact that while associated diseases reported in patients having pernicious anemia, such as thyroid diseases, the myxedema, the hyper thyroidism, diabetes, pneumonia, bronchial asthma, and we do know that some of the instances of pernicious anemia turn out to be leukemia later in life, I haven't found a patient who was reported as having carcinoma of the larynx as a complication.

The last point which I thought I would emphasize is the fact that we don't ordinarily think of lethargy as being a very common finding in pernicious anemia when the blood counts are below two million. In Wintrobe's book he states that in thirteen out of fourteen patients with blood count below two million, there was a reduction in the level of consciousness justifying diagnosis of depression.

Dr. Long: Dr. Ginsberg has pointed out the rarity of this disease in Negroes. I am reminded of an incident in 1930 or 1931. Dr. Minot came to Baltimore to spend several days with us. At the student conferences on Friday afternoon held by Dr. Lincope, one of his students presented three patients, three Negroes with pernicious anemia. Dr. Minot wouldn't agree they had pernicious anemia. As a result he stayed over about a week longer while he studied them, and then agreed they had pernicious anemia. It is less than thirty years ago that many of the experts in this country did not believe that pernicious anemia existed in the Negro race. It is interesting that a man as eminent in his field as Dr. Minot was thirty years ago, did not believe that this disease occurred in this race.

Now, another thing I was interested in which Dr. Ginsberg brought up; the lethargy of this patient: because to me that is normal in pa-

tients having pernicious anemia. I had to take care of a great number of patients having pernicious anemia before the liver era. These were patients who would be on wards for weeks and weeks with red counts of slightly over or under one million. They were all lethargic, which used to be the rule rather than the exception. Now they are treated so promptly they do not become lethargic. The matter of associated gastric lesions is also interesting. We used to have a rule of thumb in 1924-1925 that if a person came in with a low blood pressure. achlorhydria, and this type of anemia, he couldn't have cancer. Very few patients with pernicious anemia ever had carcinoma of the stomach thirty years ago. They didn't live long enough to get it.

Dr. Witts, would you like to say anything about this patient who has pernicious anemia and carcinoma of the larvnx?

DR. WITTS (Nuffield Professor of Medicine, Oxford, England): I am very grateful for the opportunity of seeing him, because I don't often see people with pernicious anemia either of this race or at his age.

This rarity of pernicious anemia is not confined to Negroes. It is present in the Japanese, who have very good hematologists who have reported on the extraordinary rarity of pernicious anemia. It is present, though rare, throughout the Far East and India and Egypt, countries in which achlorhydria is quite common. This is really one of the great mysteries of anemia, why it should be so rare in countries in which gastritis and achlorhydria appear to be so common.

Regards age, pernicious anemia behaves like cancer in the fact that it does become increasingly frequent in the decades, the difficulty being, of course, it doesn't allow too many people to reach the age of one hundred.

In the old days when one was looking for pernicious anemia, it was quite a good thing to go around the geriatric institutions and do hemoglobins on the patients, because so often this disease was regarded as just a sign of age. The patients became rather weak, their skin was like parchment, and one would say, "Old So-and-So is failing," and no blood counts were done. If one went around, one could sometimes, when looking for cases, find numerous unrecognized instances of this disease among people in these institutions.

I was interested that he was transfused. That is always one of the dilemmas with these patients, whether one should rely on vitamin B-12 or whether one should transfuse with the risks that this has, in this age, with anemia. As long as they are not stuporous, as long as they are able to move about the bed freely, I usually prefer to rely on B-12 alone and not transfuse, but it is one of those fifty-fifty decisions one has to make at times.

I think lethargy was mentioned in Addison's original christening of this disease. He speaks about an awful lethargy which it is impossible to fight against, and I would regard it as a very characteristic symptom. Finally, I would like to have seen the x-rays; the rugae in the stomach, which could make me a little suspicious of the diagnosis of pernicious anemia, would make me wonder whether there weren't some complications present.

It is, of course, always very important to x-ray these people. You can't tell the first time they are seen, because carcinoma of the stomach may also be present. On the other hand, I don't know of any association with carcinoma

of the larynx. When you get to one hundred, it is quite common to have multiple lesions.

I am most grateful for the opportunity of having seen this patient.

DR. LONG: Do you have the x-rays so they can be shown?

DR. KATZ: We don't have anything at all on the stomach. He was lying on his back, and that made it difficult. The statement is made that there are possibly polyps. I think that was made because the examination wasn't good enough to reveal polyps. There is no evidence that there are polyps. That is all you can say.

Dr. Long: Dr. Lichtman, do you have any comment which you would like to make?

DR. LICHTMAN: The only comment I want to make is that it is my impression that polyposis or polyps in the stomach are not rare, although the atrophic stomach polyp may exist. I remember this very well going back to the first patient I ever saw, as a student, who was classified as having lesion of the stomach, sarcoma, radiographically, with permanent megaloblastic anemia; and on gastroscopy it turned out to be polyps in mucosal folds. I think the literature bears out the fact that there is an increase in polyps in this disease.

Dr. Long: Are there any other questions or comments? . . . Thank you.



WANT A CHUCKLE? SEE "OFF THE RECORD ..."

Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. Pages 25a and 29a.

WM. D. McNALLY, A.B., M.D. Spring Hill, Alabama

Accidental POISONING in Children



We are careless, many times thoughtless, and occasionally dumb in the handling of poisons in our homes and places of employment. A carc...ss owner of a hot house transferred a portion of an insecticide from the original container to a whiskey flask, without labelling the container poison. The liquid in the flask contained 44.84 percent nicotine. A workman came into the work shop, saw the light brown liquid in a flask labeled with the name of a popular brand of whiskey. It was too tempting to resist. He took one swallow and became a coroner's case.

Unlabelled bottles of solution of boric acid, given to infants for water caused 8 deaths in the nurseries of two different hospitals. This is an illustration of the thoughtlessness on the part of a supervisor of a nursery who puts a gallon bottle of boric acid solution along side of the bottle of water which is to be given to the babies, and the negligence and stupidity upon the part of the pharmacist who dispenses a bottle of poison without the proper label. From these heartbreaking episodes of unneces-

sary accidental poisonings, hospitals became cognizant of the fact that boric acid was a poison, and measures were instituted to prevent similar accidents.

Forty years ago, children found the bright colored Hinkle's pills, bichloride of mercury tablets, arsenic and phosphorus rat poisons, caustic washing powders left within their reach. Today few poisonings by these substances are seen, but a greater evil is presenting itself, with the advent of hundreds of new drugs which the physician prescribes, and new chemicals for use in the home, and on the farm and garden, as insecticides and rodenticides, all of which markedly increase the chances for the child under five years to satisfy his curiosity when these agents are left within his reach.

The Research and Reference Branch, Division of Medicine, Food and Drug Administration, Department Health, Education and Welfare, in Washington, D. C., reported the accidental poisonings treated in eight hospitals in the District of Columbia from January to December 1954. This report enumerates the as-

tounding number of four hundred and twentynine poisonings, eight of which were in adults, the balance in children. In Table Eight of that report, the accidental poisonings were classified as:

Medications	241
Paint and Accessories	28
Pesticides	36
Petroleum Products (distillates)	26
Polishing and Sanitizing Agents	76
Miscellaneous	16
Others as Poke Berries, Tobacco,	
Lead, Incense, Matches	8
Alcohols	4
Cosmetics	2

In the Mobile County Hospital, Alabama, in 1957, seventy-one different poisons were used. Of this number there were twenty-one instances of kerosene oil, twelve of aspirin and three of bleach. The District of Columbia report shows one hundred and eighteen instances of aspirin poisoning, nineteen of kerosene, and thirty of bleach. As kerosene and aspirin are among the major causes of accidental poisoning in children, the author will discuss these two poisons.

In 1956 the author reported a study of two hundred and four instances of kerosene poisoning occurring in the previous ten years.³ In 1957 a report of forty-eight instances was published.⁴ In this paper eighty-three instances of accidental poisoning in children, thirty-one of which were due to kerosene, nine to aspirin, two to salicylates, the balance due to paint and accessories, cleaning and polishing agents, medication and pesticides will be discussed.

Kerosene poisoning is more frequent in children in the south than any other poison. Bain⁵ reported that there are over four hundred deaths of children under five years of age from accidental poisoning each year. Petroleum products accounted for more than twenty-five percent of the deaths, thirty-three percent of the above number were due to drugs, aspirin and salicylates. Since the introduction of mineral oil in 1950 in the treatment of kerosene poisoning in Mobile County Hospital there has been only one death up to June 1958.

The ages of the patients admitted to the

hospital varied from nine months to five years, ninety - eight percent were under two years. Ninety-two percent were Negro, with the sexes running about equal in number. The average period of hospitalization was five days, ranging from one day to fourteen days. The amount of oil taken was never accurately determined. The parents would give the amount taken as one swallow to a cup full. In a previous report of two hundred and four patients, the case fatality rate was 2.8 percent, in the twenty patients in 1957, there were no deaths. Other authors have placed the mortality from 6.7 to eleven percent. Our patients may have been seen earlier, or the mineral oil treatment may account for the lower mortality rate.

The diagnosis depends chiefly upon the history obtained from the parents, the odor of kerosene in the breath, in the vomitus, or in the stomach washings, and the radiological examination. In arriving at a positive diagnosis, a chemical examination of the stomach washings should be made. While toxicologist at the Cook County Hospital in Chicago, I seldom obtained, from the specimens submitted, enough kerosene oil for chemical examination. The distillate from the vomitus or washings gave a more pronounced odor than the original sample. Only the larger hospitals have personnel qualified to make such examinations.

Gastro-intestinal symptoms occurred in nineteen percent of the patients, only two had blood streaked vomitus, or occult blood in the stool.

Central nervous symptoms were more pronounced in those with delayed admissions to the hospital or in children taking larger amounts of the oil. As most of the little patients are too young to describe the effects of the swallowing of the kerosene, the attending physician will note the irritation of the mouth and throat, the choking cough, and the odor of kerosene. The children who can talk, complain of burning in the mouth, throat and stomach. Not all children vomit, they have choking spells, become drowsy but rarely go into a coma, and the heart and respiratory rates are increased. The pulmonary damage is the outstanding feature, characterized by the rapid development of a

bilateral bronchopneumonia.

Laboratory studies are of value in checking the progress of the illness. The leucocyte count was always high with seventy-three percent of the children having white counts over 10,000. The white count on patients developing pneumonia ranged from 7,850 to 19,500, with an average of 11,800. On examination of the urine, an occasional specimen will show a trace of a reducing substance, white and red cells which are few in number, and a trace of albumin.

There has been no routine follow-up on these patients. However, some of the children returned months later for other conditions, and at this time, no ill effects were noted from the previous ingestion of kerosene.

The cause of the pulmonary damage following the ingestion of kerosene has been a source of a difference of opinion on the part of various authors. One group using experimental animals concluded that aspiration of kerosene into the tracheobronchial tree, aided by gastric regurgitation produced the pulmonary changes. Another group of investigation believed that the rapid gastrointestinal absorption and spread by the blood stream produced the parenchymal and, vascular changes which are found. Diechman⁶ and associates submit evidence that injury to the lung results from absorbed kerosene carried by the blood stream, as well as by aspiration. In animal experiments, regardless of the method of administration, it has been observed that the lung findings are the same. With rabbits they found a marked difference between the oral (28.0 ml/Kg) and the intravenous lethal dose (0.18 ml/Kg), indicating that only a trace of kerosene oil in the circulation is necessary to produce severe pulmonary changes.

Very few instances of kerosene poisoning have been examined postmortem. The lungs have been reported to be heavy, red, and moist, and as having the odor of kerosene. Microscopically, sections of the lung show hyperemia, edema, hemorrhages and focal interstitial inflammation. There was necrosis and inflammation of the bronchi, and an infiltration of polymorphonuclear leucocytes and mononuclear cells.

The findings are those of an acute hemorrhagic edema and acute bronchopneumonia. Some pathologists have reported no change in the gastrointestinal tract, others have observed congestion of the heart, liver, kidneys and the gastrointestinal tract.

The routine treatment for patients admitted to the hospital is immediate gastric lavage, with two ounces of mineral oil. Another ounce is left in the stomach. If the child has vomited, or is not drowsy, the lavage is omitted, but an ounce of mineral oil is given to the child to absorb any kerosene left in the stomach. Every child is given 300,000 units of penicillin when admitted to the ward and 0.5 cc. of caffeine sodium benzoate in all who have drowsiness, or are depressed. Penicillin is given every four hours until the temperature is normal. Where the respiration is labored the child is given ½ cc. of Coramine® and put under an oxygen tent.

In the survey made for the year 1949 and 1950, 40.9 percent of accidental deaths produced by drugs and salicylates reported by Bain were due to aspirin and salicylates. In the twelve patients reported in this paper there were no deaths from aspirin. The histories did not always state the source of the aspirin, whether it was found by the youngster, given by the parents in the absence of, or in excess of a doctor's prescription. Aspirin for many years has been regarded as harmless by the laity and some physicians, and some instances of aspirin poisoning may be iatrogenic. Harvie and Singer state the first effect of ingestion or injection is hyperventilation "as a result, CO. is blown off in excess, the plasma CO, pressure and CO2 content fall, and the pH rises. If the dose has been large, a primary metabolic acidosis is soon superimposed upon the initial respiratory alkalosis. In this mixed stage, diagnosis may be difficult by ordinarily available laboratory methods." Tinnitis, impaired hearing, nausea, vomiting and diarrhea, profuse perspiration, severe thirst, redness of the skin, and dehydration, fast and deep respiration are symptoms of overdosage by aspirin and the salicylates. The child may become sleepy, have delirium, hallucinations, convulsions and coma. Death may result from circulatory failure or respiratory paralysis. Approximately seventy percent of ingested salicylate is excreted in the urine, some in free form but mostly as salicylurate. Some salicylate may be detected in the sweat. The urine may contain albumin, casts, red and white cells, acetone, in addition to salicylic acid.

Treatment

Wash out the stomach with a solution of ten grams of sodium bicarbonate to the pint of water. (Save the washings and all specimens of urine for chemical examination.) Administer by the intravenous route one gram of calcium gluconate in sterile water. Fluids should be forced to combat the dehydration of vomiting and sweating, and to promote the renal excretion of the salicylates. The convulsions may be due to cerebral anoxia and oxygen may give relief. In a recent instance of aspirin poisoning in one of our local hospitals, the child was in coma, and the above procedure failed. An alert pathologist used the artificial kidney, removed the salicylate from the blood, and saved the life of the child.

Tests

The stomach washings or urine can be made acid with dilute hydrochloric acid, extracted in a Squibb funnel with petroleum ether, the ether washed with a little water and the ether is separated from the water, and is evaporated into a small beaker, over a steam bath. A portion of the residue in the beaker is put into a test tube to which is added one cc. of methyl alcohol and then three drops of sulphuric acid. Allow to cool, then heat gently, the odor of oil of wintergreen indicates the presence of salicylic acid. In another test tube containing some of the residue, add a very dilute solution of ferric chloride, if positive a violet color will be obtained. If the hospital has a chemist, the most reliable test, is to heat some of the residue in a test tube, the salicylic acid will sublime without decomposition, and the crystals will have a melting point of 155 degrees C.

The opportunity of the inquisitive children to ingest poisonous substances is greatly enhanced by the numerous new chemicals and drugs introduced into our every day life in the household, the garden, and on the farm. To make matters worse is the fact, that we may not have methods of detection or of treatment, for a long time after the introduction of some of these poisons. The general practitioner visiting patients in the homes is in the first line of defense in the reduction of accidental poisonings. His personal advice on the possibilities and prevention of accidental poisoning in children from drugs and chemicals left in a position of easy access by the child, means more to the mother than any other source of information.

Kerosene, aspirin and boric acid have been used in homes for so many years, that it is difficult for the people to understand that these substances are definitely poisonous, and may cause death. The pharmacist should tell parents when they are purchasing some of the common drugs and chemicals, to keep these drugs out of the reach of their children. As kerosene is purchased in gallon bottles in most instances, by people who use it as a source of fuel, labels should be required to be placed upon such containers, with the word POISON in large red type, and with the precautions needed for the handling of the kerosene clearly and simply indicated on the label.

Every community of over 100,000 people should have a POISON INFORMATION BUREAU in the county hospital, which parents and physicians could call by telephone in case of poisoning. This bureau should have for ready reference, the composition of the common patented and proprietary drugs, household cleansing agents, solvents, sprays, rodenticides, pesticides, and other toxic substances in common use which may cause poisoning. This bureau should be able to give the toxic effects of the substance in question and the latest antidotes for the treatment of the same. Besides reference books upon toxicology, each hospital library should have a copy of Clinical Toxicology of Commercial Products, by Gleason, Gosseli and Hodge. This book has a section

devoted to an alphabetical compilation of chemical ingredients commonly found in commercial products used by the consumer in and around the home and farm, in addition to giving first aid and general emergency treatment of poisons.

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3986 Oxford Drive



A TRIVALENT ADENOVIRUS VACCINE FOR PREVENTION OF ACUTE RESPIRATORY DISEASE

"A commercially prepared formalin-inactivated adenovirus vaccine containing antigens of types 3, 4 and 7 adenoviruses was routinely administered intramuscularly to 20 percent of newly arrived recruits over a 3-month period. There were no significant outward reactions. A comparison of the reported acute febrile respiratory disease experience of the vaccinated and unvaccinated recruits indicated that the vaccine reduced the total febrile respiratory disease incidence by 55 percent, and such illnesses requiring hospitalization during the third to ninth week of training by 65 percent. An even greater prophylactic effect was observed in the case of 'viral' pneumonia requiring prolonged hospitalization. Little, if any, reduction in the reporting of afebrile respiratory illness was observed. This may or may not reflect the etiology of these afebrile illnesses. Adenovirus vaccines can be of great value in the control of acute respiratory disease in military recruits."

BENJAMIN F. GUNDELFINGER, MATTHEW J. HANTOVER, JOSEPH A. BELL, CLAYTON G. LOOSLI and WALLACE P. ROWE Am. Journal of Hygiene, September 1958

Nocturnal or Recumbency Muscle Cramps

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In dealing with patients having various diseases, and particularly those with rheumatic disorders of all types, we have been impressed with the frequency of the complaint of muscle cramps, usually nocturnal, or occurring during recumbency. In some they make their appearance one or more times each night, while in others they occur only once or twice each week, but over a period of time they usually increase in frequency and severity. The patient may be suddenly awakened with severe cramps in one or both legs and, depending on the severity, may have to massage the legs, jump out of bed to stand or walk, immerse the feet in water, or employ other methods of relieving the excruciating pain. When the cramps happen several times each night, they interfere with the patient's rest and thus are handicapping and may become a menace to his health. In the more severe instances the patient dreads to retire because he is certain he will be awakened with sudden severe pain, etc., due to cramps in the legs.

The frequency and the severity of these

cramps in some instances focused our attention on this problem. Many methods of therapy such as quinine, nicotinic acid preparations, tolazoline, antihistamines, mephenesin, nylidrin, etc., were tried but none proved to be consistently effective. We were, therefore, looking for a therapeutic agent that might consistently offer satisfactory relief to these patients and such an agent was rather serendipitously discovered.

In 1955, a 68-year-old white female was seen who had severe rheumatoid arthritis but no evident vascular disease. She was awakened several times each night by severe leg cramps and they became a mental as well as a physical hazard to this patient. She was advised to rest for two hours each afternoon but even this was interrupted by the cramps in the legs. She would remain up late at night because she had a conditioned fear of awakening with cramps. She was given quinine, gr. V at bedtime, which gave her very little relief, and later this was increased to gr. X at bedtime with a fairly large dose of barbiturates but still she had only partial relief. Several other therapeutic agents were tried but they gave no relief. In addition to rheumatoid arthritis, this patient had a mild bronchial asthma, and following a severe cold this became aggravated, particularly during the night. Because of the asthma, she was given aminophyl-

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line orally, gr. III after breakfast and at bedtime, and the quinine, gr. V at bedtime was continued. When the patient returned one week later, her first remarks were that the new medicine which she had been given had relieved her cramps, and she was more interested in the relief of cramps than of asthma. The only medication was the aminophylline and she had not otherwise changed her daily routine.

In an effort to determine if the aminophylline had played a role in the relief of her leg cramps or whether this relief was just "happenstance," the aminophylline was omitted for one week but the quinine, gr. V at bedtime was continued. Her leg cramps returned immediately. The aminophylline, gr. III after breakfast and at bedtime was again given for one week and again the cramps disappeared. The quinine was then omitted for one week and the cramps returned but to a lesser degree than when no medication was given. When therapy with aminophylline and quinine was reinstituted, the leg cramps again disappeared. In the interval, the patient had recovered from her cold, the asthma had improved, but she had experienced a mild gastric irritation from the medication. She was then given in capsule form aminophylline, gr. III and quinine, gr. IV* at bedtime each night and there was no return of the leg cramps. After four weeks of therapy, all medication was omitted and the cramps returned, but with the resumption of therapy they again disappeared. Several other patients who were given this combination also obtained similar relief.

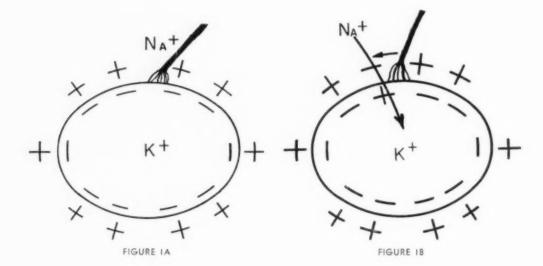
We then became interested in the apparent activity of quinine and aminophylline in the control of cramps. Before we could decide this question, we believed it was necessary to (1) define muscle cramps, (2) understand the physiology of muscle contraction, (3) the pathological physiology of muscle cramps, and (4) the pharmacologic action of the two drugs involved.

1. DEFINITION OF MUSCLE CRAMPS: A

muscle cramp is a prolonged, painful, involuntary contraction of a muscle.

2. THE PHYSIOLOGY OF MUSCLE CRAMPS: As is the case in any disease, it is necessary to understand the normal if we are to understand the abnormal or disease process. The literature is confusing but we shall attempt to simplify and portray diagramatically the physiology of muscle contraction according to the modern theory because as stated above, muscle cramps, the subject of our discussion, are simply a prolonged, painful, involuntary contraction of muscles. Most authors appear to agree, however, that the electrolytes are a controlling factor in muscle contraction and that the electrochemical reaction initiated by a motor neural impulse involves changes in the intracellular to extracellular ratio of certain electrolytes. A cell membrane is said to be polarized and a membrane potential is said to exist when there is an excess of positive ions on one side and an equal excess of negative ions on the other side and when the positive and negative ions do not diffuse through the membrane in equal numbers. Normally the concentration of potassium within the cell is approximately 130 m.e.q. whereas it is only 5 m.e.q. in the extracellular space. It is mainly this difference in the potassium concentration across the cell membrane that determines the resting cell membrane potential, or membrane polarization, and this in turn is intimately related to the general excitability of the muscle cell. Potassium ions are able to diffuse across the cell membrane with relative ease and the difference in concentration of the intracellular and extracellular potassium allows more potassium to diffuse outward than inward across the cell membrane, thus establishing a positive change outside the cell. On the other hand, the cell membrane is relatively impermeable to sodium ions and yet the intracellular concentration of sodium in the resting cell is approximately 1 m.e.q. and 142 m.e.g. in the extracellular fluid, the reverse of the potassium. Guyton' states that this difference in the intracellular and extracellular concentration of these ions can be explained only on the basis of a homeostatic mechanism that

Quinamm*, Walker Laboratories, Inc., Mount Vernon, New York.



actively transports them across the cell membrane.

It can be stated that when a cell is in a resting state, that is, it is not conducting an impulse but is ready to receive one, the membrane is fully polarized with a membrane potential of approximately 90 m.v., and is electropositive on the outer side and electronegative on the inner side. It is quite permeable to potassium ions but relatively impermeable to all other ions and there is a concentration of 130 m.e.g. of potassium within the cell and 5 m.e.q. without the cell, and a concentration of 1 m.e.q. of sodium within the cell and 142 m.e.q. without the cell. Figure 1A represents a muscle cell in a resting state and fulfilling all the specifications just enumerated. The contraction of a muscle is initiated by a motor neural impulse that travels along the nerve and this impulse produces an electric current. When this electric current reaches the myoneural junction (Figure IA) it liberates acetylcholine, which in turn increases the permeability of the cell membrane immediately adjacent to the myoneural junction and it becomes permeable to all ions. This allows a redistribution of ions across the cell membrane and there is a shift of sodium from the extracellular fluid into the cell. One author states that when the membrane becomes permeable to the sodium ions it is like opening the

flood gates in a dam. This shift of the ions and particularly of sodium in this area causes a reversal of the membrane potential and it changes from electropositive to electronegative en the outer side and from electronegative to electropositive on the inner side (Figure 1B). This local reversal of polarity renders the next adjacent segment of the membrane permeable and sodium migrates intracellularly. This process spreads like a chain reaction around the cell membrane until the entire membrane changes from electropositive to electronegative on the outer side and from electronegative to electropositive on the inner side (Figure IC). Guyton² states that immediately after the cell membrane becomes permeable to all ions, physical changes occur that once again make it relatively impermeable to all except potassium ions. The membrane is then once again impermeable to the inward flow of the positive sodium ions.

As stated above, the cell membrane is always relatively permeable to potassium ions and there is a greater concentration of potassium within the cell than on the outer side of the cell. These two factors allow an outward flow of the positive potassium ions and this soon creates a net deficiency of positive ions on the inner side of the membrane. The outward flow of the positive potassium ions begins at the same point (the myoneural junction) where the impulse

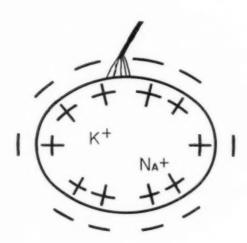
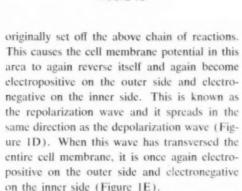


FIGURE IC



It is obvious from the above description of the physiology of muscle contraction that both sodium and potassium play an important role. Guyton3 states that if a muscle cell is to continue to respond to stimuli, the sodium and potassium must be returned to their normal concentration. However, sodium diffuses into, and potassium out of, the cell during muscle contraction and they return to their normal positions once this activity ceases. This can be explained only on the basis that the homeostatic mechanism previously mentioned actively transmits sodium outward and potassium inward through the cell membrane (Figure 1F). It is believed that this cellular homeostatic mechanism is dependent on energy produced by glycolytic and oxidative pathways. The final stage of electrolytic shifting of the sodium and potassium by the homeostatic mechanism re-

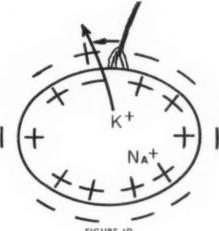


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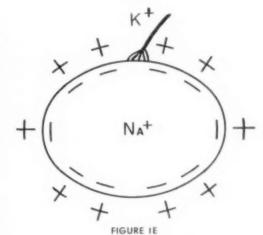
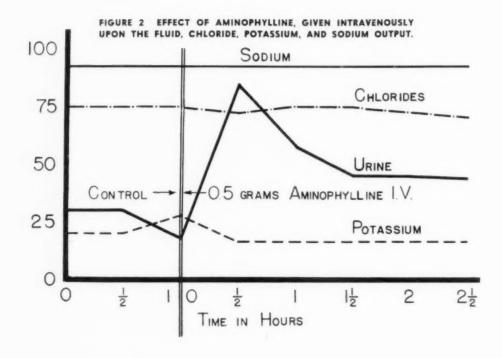


FIGURE IF

(VOL. 87, NO. 6) JUNE 1959



turns the cell membrane to its resting position and re-establishes the normal concentration of the extracellular and intracellular potassium and sodium as originally outlined in Figure 1A.

3. THE PATHOLOGICAL PHYSIOLOGY OF MUSCLE CRAMPS: Guyton' compares a muscle cramp to the muscle spasm produced by a bone fracture or an arthritic joint where there is a discharge of neural impulses over the spinal reflex are from the injured area. Adams, Denny-Brown and Pearson state that muscles developing cramps often have spontaneous twitching or fasciculations during repose and that the variable action potentials of the electromyogram indicate an irritable focus exists in the motor nerve unit. It is Dr. Denny-Brown's6 feeling that the electrical activity occurring in the fasciculations spreads by continuity to adjacent muscle fibers until a major part or all the muscle is involved in a painful sustained contraction. The exact reason for this propagation from one muscle fiber to another is not clear though electrolyte imbalance appears to be a possible explanation. The fundamental

origin of muscle fasciculation and muscle cramps is not understood, but any condition which reduces the permeability and thereby the polarization of a muscle cell membrane may give rise to these phenomena. Such etiological factors as cold, a sudden sharp blow, stagnation of the blood from prolonged standing, and excessive loss of salt in hot weather are well known predisposing factors. The readiness with which a muscle contracts has an inverse relationship to the degree of polarization, which in turn is a function of the ratio of the intracellular to the extracellular potassium. Lowering the intracellular potassium or increasing the extracellular potassium makes the muscle cell more irritable. An indirect parameter is the concentration of the extracellular sodium, depletion of which will increase excitability by producing an intracellular migration of water or an extracellular shift of potassium. Evidence at present indicates that increased muscle responsiveness or cramps may be due to a decrease in the ratio of the intracellular to the extracellular potassium concentration, resulting

in hypopolarization of the membrane. According to the above concept, any agent that will increase the degree of polarization or block activation at the myoneural junction should render the nerve muscle unit less excitable.

4. PHARMACOLOGIC ACTION OF THE TWO DRUGS USED:

A. Quinine: It is believed that quinine exerts a competitive blocking of the action of acetylcholine upon the cell membrane at the myoneural junction and thus reduces the irritability of the nerve muscle unit. Quinine is also thought to cause an intracellular migration of potassium, thereby increasing the degree of polarization and the ratio of the intracellular to the extracellular potassium, thus rendering the muscle cell less excitable.

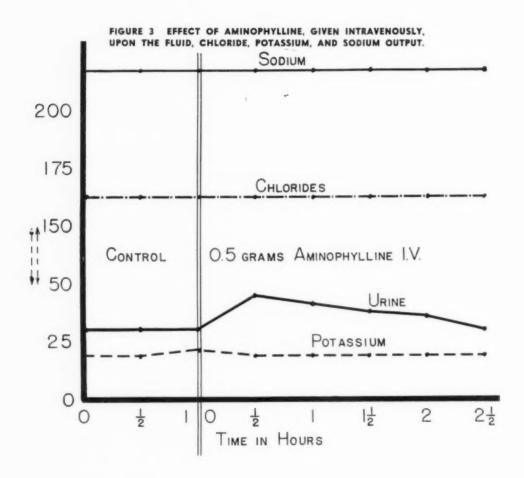
B. Aminophylline: Aminophylline has no known electrolytic effect at the level of the neuromuscular unit directly and, in an effort to determine the physiological basis for the clinical observation that there was a synergistic action of aminophylline and quinine in the relief of muscle cramps, a study of the effect of 0.5 gm. of aminophylline intravenously was carried out on six patients.

In order to establish a normal for these patients, a Foley catheter was inserted and two specimens, one-half hour apart, were collected. The amount of urine in cc, and sodium, potassium and chlorides in m.e.q. per liter, were determined on each specimen. The patient was then given 0.5 gm. aminophylline intravenously and the same determinations made on five specimens collected at half hour intervals. Figures 2, 3 and 4 illustrate the results obtained in three of these patients. Although the amount of urine varied, it was invariably increased. Contrariwise, even though the amount of sodium and chloride eliminated in the urine each half hour in m.e.g. per liter varied in different patients, it remained constant in each before and after the intravenous aminophylline. There was a slight variation in the potassium but we did not consider this significant and we do not believe the effect of aminophylline can be attributed to any effect upon the electrolytes. There were no reactions to the intravenous aminophylline

but admittedly this does not preclude toxicity from this drug when given intravenously.

It appears from our experiment that aminophylline (a) increases the urinary flow and (b) it does not significantly disturb the electrolyte balance. It is conceded that aminophylline may enhance the action of acetylcholine but we also believe that this particular action of aminophylline is counteracted by the competitive blocking of the acetylcholine at the myoneural junction by the quinine contained in the tablets of quinine and aminophylline. It is thought that long periods of standing may produce stagnation in the legs or in some instances there may be some involvement of the veins that may prevent proper venous return in the lower extremities and that this may also produce stagnation and that this stagnation may produce muscle cramps. The increased output of urine following the administration of aminophylline may, therefore, relieve local stagnation and thus prevent muscle cramps due to stagnation.

Drill7 states that it is clear that the xanthines can increase metabolism, respiration, cardiac output, and urine flow; dilate coronary vessels, produce bronchial dilatation and stimulate the cerebral cortex, and that aminophylline is the best of the xanthines. An increase in the respiration increases the quantity of oxygen available for absorption and CO2 elimination by the same proportion, and an increase in blood flow increases the amount of oxygen reaching the tissues for cell metabolism and hastens the removal of carbon dioxide and other waste products from the blood and lessens the concentration in the tissues. This should improve the cell metabolism and, if it is improved, then all functions of the cell should be improved including the homeostatic mechanism which helps to maintain the normal ratio of potassium and sodium within and without the cell. If there is improvement of the cell homeostasis, it should increase the active transport of potassium from the extracellular space into the cell, thus increasing the polarization of the cell and thereby decreasing the excitability of the cell. The combination of aminophylline and quinine would appear, therefore, to be an excellent combina-



tion for preventing muscle cramps by (1) blocking impulse transmission at the myoneural junction and by (2) increasing urinary outflow, peripheral blood flow, respiration, and thereby oxygen consumption and CO₂ elimination. This latter should augment the cell metabolism, and thus the homeostatic mechanism that maintains the normal relation of intra- and extracellular potassium and sodium, thus reducing the excitability of the muscle cell and the propagation of depolarization waves to contiguous muscle cells. This theoretically explains the apparent activity of quinine and aminophylline in relieving muscle cramps.

It is a well known fact that muscle cramps due to excessive perspiration are not due to the loss of fluid but to electrolyte imbalance, or in this instance, the excessive loss of sodium which causes a reduction in the concentration of the extracellular sodium. This has led to the feeding of sodium chloride to foundry workers and others subject to excessive perspiration. The replacement of the fluids alone in this group is not sufficient to prevent the cramps, whereas the feeding of sodium chloride alone will prevent the cramps. Quinine and aminophylline in this instance, would not restore the electrolyte balance but the blocking action of the quinine and the improvement of the cell metabolism by the aminophylline might give some relief.

Those of us who have never experienced muscle cramps are not fully aware of how severe they may be or how they may affect the morale of a patient. We are prone to take this symptom too lightly and make very little effort to relieve it. This is reflected in the fact that there is very little that is new in the treatment of muscular cramps and a review of the literature does not give too much information on their etiology or methods of relieving them.

Materials and Methods

In the past three years, we have used a combination of quinine, gr. IV, and aminophylline, gr. III in treating muscle cramps. A total of two hundred patients was studied. There were sixty males and one hundred and forty females, ranging in age from thirty-six to eighty-seven. The primary diagnoses included rheumatoid and osteoarthritis, asthma, fibrositis, psychoneurosis, hypertension, bursitis, diabetes, etc. The frequency of the follow-up visits ranged from one week to three months, over a period of two years. In each instance, the medication was started after the initiation of treatment for the primary condition and where the cramps had persisted.

The above combination, in capsule form, was given at bedtime daily to the first twenty-five patients treated. The second twenty-five patients were given this combination in tablet form. The third twenty-five patients studied were first given placebo medication in identical tablets, and later were given the above combination. Others were given the medication for short periods, followed by intervals of omission and return to the drug. At present, each patient is instructed to take one tablet before retiring or just prior to any circumstances that is known to precipitate cramps in each instance.

Toxicity

It is always possible that patients may be allergic to quinine, and to a lesser extent, to aminophylline. The total daily dose of each drug, however, is small and the likelihood of allergic reactions thereby reduced. The number of reactions in our experience has been small and may be divided into the following:

DERMATOLOGIC: One patient developed a mild urticaria which responded promptly to

diphenhydramine and triamcinolone. One patient developed a very severe eczematoid reaction about four hours after taking one tablet, and twenty hours later experienced a chill and a temperature of 104. Adrenalin, diphenhydramine, and triamcinolone produced a satisfactory solution to these symptoms. A third patient experienced a mild macular type of rash but this was not troublesome and disappeared when the medication was omitted and did not require other treatment.

GASTROINTESTINAL: One patient developed severe diarrhea and intestinal cramps after one tablet and another had mild diarrhea after taking one tablet at bedtime for four days. One patient experienced severe cramps but no diarrhea on one tablet each night. Even after ½ tablet, the cramps persisted but a dose of ¼ tablet was well tolerated. Five patients experienced mild abdominal cramps but stated the relief obtained from the leg cramps outweighed the abdominal discomfort.

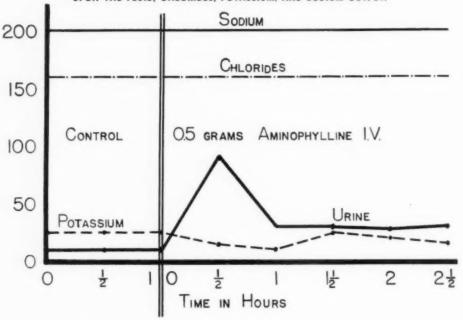
TINNITUS, DIZZINESS: One patient developed severe tinnitus which persisted even though the dose was reduced to ¼ tablet. Another experienced severe tinnitus and the medication had to be omitted, while three others complained of mild tinnitus but they preferred the tinnitus to the muscle cramps.

Results

Clinical observations have been made on two hundred patients and the following case reports are typical of the results obtained:

CASE ONE: Patient: J. P. Male. Age: 68. Diagnosis: Advanced osteoarthritis of the right hip and knee, moderate arteriosclerosis, mild varicose veins both legs without edema. The oscillometric readings in both legs were within normal range for his age. He complained of severe muscle cramps in the legs, occurring several times a night for the past four years. He had received many forms of medication but without noticeable relief, but with one tablet containing quinine and aminophylline at bedtime they were completely controlled. The medication has been omitted and reinstituted several times but invariably the cramps were

FIGURE 4 EFFECT OF AMINOPHYLLINE, GIVEN INTRAVENOUSLY, UPON THE FLUID, CHLORIDES, POTASSIUM, AND SODIUM OUTPUT.



controlled by the medication and returned when it was omitted. It has now been ten months and the cramps have remained under complete control. The severity of the cramps and the memory of wakeful nights are so vivid in this patient's mind that he always sends to the office for a renewal at least one week before his supply is exhausted.

CASE TWO: Patient: J. L. Female. Age: 46. Diagnosis: Rheumatoid arthritis of seven year's duration. The arthritis was not severe and was well controlled with a small dose of Decadron. For the past five years she had been awakened once or twice a night, two or three nights a week, by severe muscle cramps in the legs and was forced to get out of bed and walk around and massage the legs. She had tried acetylsalicylic acid, barbiturates, quinine, and nicotinic acid preparations without relief. She was then given the placebo tablets for ten days but without any relief. She was then given the combination in identical tablets and obtained complete relief.

She may omit the medication for two or three nights without return of symptoms but if she misses more than this, the cramps return but are always relieved again by tablets of quinine and aminophylline. The tablets obviously do not cure the cramps but very effectively controls them.

CASE THREE: Patient: D. H. F. Male. Age: 71. Diagnosis: Osteoarthritis of the lumbar spine. He had experienced considerable pain, stiffness and soreness over the lower back radiating across the lumbosacral region for ten years. The oscillometric readings in the legs were normal and no varicosities were detected. In addition to the pain in his lower back, he complained of severe nocturnal cramping of the muscles in the leg. He would be awakened once or twice each night, three or four times a week, and would have to get out of bed, walk around, massage his legs, etc. He was given tablets containing quinine and aminophylline, one at bedtime, and within four days the cramps had lessened about seventy-five percent. When the

dose was increased to 1½ tablets, the symptoms completely disappeared. Later the dose was reduced to one at bedtime, and the cramps have been completely controlled for two years except when he omits the medication. Sometimes, after not experiencing cramps for several weeks, he omits his medication and in a few days the cramps return. At first they are mild but, if he does not return to the medication, they gradually return to their former severity.

The physiological action of aminophylline and quinine as above described, and the relief obtained in the patients with cramps, suggested to us that perhaps this combination might be effective in any condition where muscle spasm might contribute to a patient's complaints. For example, patients with rheumatoid arthritis experience muscle stiffness, soreness and cramping at night. They may be awakened by these symptoms several times each night, depending on the severity of the disease. It is also well known that in this group of patients the pain, soreness, stiffness, etc., is always worse on arising in the morning. Because of these symptoms, we were interested in ascertaining if the combination of quinine and aminophylline might also be effective in this group and whether it might offer some degree of relief and improve not only their rest at night but also relieve some of the morning stiffness that is a great handicap to some of these patients.

Patient: M. D. Female. Age: 56. Diagnosis: Severe rheumatoid arthritis of seven years duration. The erythrocyte sedimentation rate, Westergren method, was 120 mm. per hour. She stated that for the past three years she had been awakened about every two to three hours during the night with stiffness and soreness of the joints, and muscle stiffness, etc. She was given Decadron 0.75 mg. for four weeks but the above symptoms persisted. She was then given Quinamm, one tablet at bedtime, with considerable relief and she was able to sleep the entire night without awakening for the first time in three years. Forty-eight hours after omitting medication, the nocturnal cramps, stiffness, etc., returned, but on resumption of the combination of quinine and aminophylline

they again disappeared. The extended use of quanine and aminophylline in rheumatoid arthritis and allied diseases is now under study and will be the subject of a subsequent paper.

Although this patient received almost complete relief, some have had only partial relief, and others have experienced no relief.

Analysis of Results on 200 Patients Treated for Nocturnal or Recumbency Leg Cramps

There was complete relief in one hundred and eighty-eight patients (94%), partial relief in eight patients (4%), and no, or indifferent relief, in four patients (2%). Most patients were relieved with the first dose and those with severe cramps were relieved as quickly and as completely as those with mild symptoms. The fact that these patients were able to sleep the entire night without being awakened by the cramps, whereas they had been awakened one or more times each night with severe pain in the legs, left no doubt as to the efficacy of the medication. They usually described their relief as wonderful, miraculous, etc. The relief was so complete in most instances that after a few days or weeks the patient would sometimes forget the past unpleasant experiences and omit or forget to take the medication.

Some patients would remain symptom free for several days or in some instances for several weeks. Neither the age, sex, duration or severity of the symptoms appeared to play any part as to the length of time they could or could not omit the medication before there was a return of the symptoms. In some, only a few doses appeared to give complete and prolonged relief, as if a cycle had been broken. If a patient had obtained relief and omitted the medication, then fatigue or nervous tension seemed to play some part in the return of the cramps but even under these circumstances they were again relieved on resuming the combination of quinine and aminophylline.

In those patients given the placebo medication first and then transferred to the combination therapy, or who were given either one alone and then given the combination, there was no doubt in their minds which medication had given the most relief and this was invariably the Quinamm. In one patient who had previously had poliomyelitis and who suffered with muscle fasciculations, there was complete cessation of these fasciculations forty-five minutes after the administration of one tablet containing the mixture of quinine and aminophylline.

Dosage

The medication (one tablet) is usually given only upon retiring for, as a rule, the cramps occur when recumbent. If, however, the cramps occur during the day, patients may take one or two tablets as deemed necessary. In many instances, the medication did not have to be continued regularly, as after seven to twentyone days of therapy the patient could omit the medication for several days or more, as though a cycle had been interrupted. In some, their period of relief without therapy was from thirty to sixty days, while in others it would be only five to ten days. When the cramps returned, they would again be relieved by the combination of quinine and aminophylline and the same chain of events as described above would again transpire. Some patients had to continue therapy almost continuously to remain asymptomatic.

Muscle cramps rarely constitute a patient's presenting complaint. They frequently appear

as a satellitic symptom in rheumatic, peripheral, vascular and metabolic diseases. The infrequency of this symptom as a primary complaint probably accounts for the relatively little attention it has received among clinical investigators.

Whatever the basic etiology of muscle cramps may be, any agent that will reduce excitability of the nerve muscle unit or increase the ratio of the intracellular to extracellular potassium should raise the threshold of muscle contraction and prevent or diminish muscle cramps.

Quinine prevents or diminishes muscle cramps by a competitive blocking of the acetylcholine at the myoneural junction. Aminophylline increases (a) urinary outflow, (b) respiration, (c) peripheral blood flow, (d) the amount of oxygen available to the cell for metabolism, (e) the elimination of CO₂, and (f) the removal of waste products from the cell metabolism and the overall nutrition of the cell. It does not disturb the electrolyte balance.

There appears, therefore, to be some physiologic basis for administering quinine and aminophylline in the treatment of muscle cramps since both probably have the effect of increasing the polarization of the cell membrane and dampening muscle cell excitability; and careful clinical observations have borne out this conclusion.

Summary

The combination of aminophylline and quinine gave relief to most of the patients with cramps in the legs occurring upon recumbency and, in some instances, to the muscle stiffness and soreness occurring at night in patients with rheumatoid arthritis. When either drug was administered alone, the relief was not as great as when the two were given together.

There was little or no toxicity from this combination and in most instances it can be continued indefinitely without untoward side effects.

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HEART MURMURS

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The question of whether the patient should or should not be considered for surgery is important in the management of many patients who have a cardiac murmur. The changes in technique and advances in the field make a discussion of these indications seem appropriate at this time. To delay too long in arriving at a decision, may result in pulmonary vascular changes which are not reversible, or in hemodynamic changes with a reverse in shunt which carry the patient beyond the point where surgery may be effective.

Responsibility for this decision rests with the physician who first detects the murmur and since this is usually the general practitioner, it behooves him to be familiar with a few basic principles. The following comments will be oriented towards enabling the general physician to formulate a practical working plan which he can apply to patients with cardiac murmurs.

On first finding a murmur, the following basic questions should be answered.

- 1. Is it organic or functional?
- 2. Is it rheumatic or congenital?
- 3. Is the lesion which produces it amenable to surgery?

The following considerations should aid in

obtaining these answers in a logical manner which does not expose every patient having a murmur to unnecessary expense, and at the same time does not withhold from the patient a possible curable or life prolonging procedure.

Organic or Functional?

Although there are no absolute criteria for differentiating a functional from an organic murmur, certain considerations and ancillary findings will help in arriving at a fairly accurate clinical decision.

If the murmur is diastolic in time, it should be considered as due to organic heart disease until proven otherwise. On the other hand it may be difficult to determine whether isolated systolic murmurs are functional or organic in origin. If the murmur is very loud its etiology is more likely to be organic. Murmurs of lesser intensity are the ones which give rise to problems in differentiation.

In general, it may be stated that functional murmurs are more likely to occur in younger children, and be less frequent in occurrence as the populace approaches adult age. They are more likely to be located in the pulmonic area and radiate little and be of a faint intensity, and they tend to disappear on inspiration. The The presence of anemia, fever, or hyperthyroidism may be responsible for a functional systolic murmur. These are due to the increased velocity of blood flow. However, associated findings such as cardiomegaly, or a history of rheumatic fever, are more suggestive of the possibility that organic heart disease may exist. A history of squatting, cyanosis, and the presence of clubbing are almost certainly diagnostic of a congenital cardiac lesion as the explanation of a systolic murmur.

There is no single factor which is solely diagnostic, but consideration of all the above points will permit of a correct diagnostic conclusion in the majority of instances of systolic murmurs.

Rheumatic or Congenital?

A murmur heard in a child under the age of five is more likely due to congenital heart disease. The history of a murmur present since birth is also more likely due to congenital heart disease, although there are exceptions. A history of cyanosis, clubbing, or squatting points to a congenital lesion. Harsh systolic murmurs associated with a thrill over the pulmonic area, or along the left sternal border, and continuous murmurs in this region are more compatible with a diagnosis of congenital heart disease. A continuous murmur may be found in interventricular and interatrial septal defects in addition to the more common patent ductus arteriosus.

A definite history of rheumatic fever, of course, favors the diagnosis of rheumatic heart disease although this finding is not always infallible. Diastolic murmurs at the apex are more likely due to rheumatic heart disease, but may also be found in relative stenotic lesions, over the mitral or tricuspid valves in some patients having congenital lesions.

When the above considerations are used in conjunction with x-ray and electrocardiographic findings, the diagnosis is apparent in a great majority of instances. However, the decision as to indicated cardiac catherization, angiocardiography, and other more elaborate studies should be left to the specialist who has had a special training in this field.

Is the Treatment Medical or Surgical or Both?

Surgery for patent ductus arteriosus is now universally accepted. The operative and postoperative case-fatality rate is very low and the results are most gratifying.

The next big field for cardiac surgery lies in the obstructive lesions. Obstructions to the aortic, pulmonary, mitral, and tricuspid valves are all now amenable to surgical therapy. Of these, aortic valvular stenosis still carries with it the highest risk of death following operation, but newer techniques especially with open heart surgery are progressively improving the results of surgery and decreasing case-fatality rates. Mitral and tricuspid commissurotomy have long been established as procedures available in practically any metropolitan surgical center.

The operation for isolated pulmonary sten-

osis usually is followed by excellent results. However, when this lesion is complicated by an associated interventricular septal defect, the procedure is somewhat more formidable and less gratifying. Current trends towards more completely curative procedures with open heart surgery which also close the interventricular septal defect instead of the palliative Brock and Balock procedures are in the process of evaluation.

Several operative techniques have been developed for correction of the atrial septal defect. The results are promising. However, the ostium primum defects and interventricular defects still carry a significantly high case-fatality rate. The results of surgery are being constantly improved and the case-fatality rate is being lowered by utilization of more advanced techniques involving pump oxygenators and open heart surgery where the operator repairs the lesion under direct vision.

In addition to homografts, various synthetic materials, such as dacron, have been used in the correction of coarctation of the aorta and aortic aneurysms. These materials have been extended in the field of vascular surgery for the correction of peripheral vascular lesions particularly those which are obstructive.

In determining the time for surgery there are several guiding principles. A lesion which may be cured with a very low risk of fatality such as patent ductus arteriosus should be operated as soon as feasible.

In those lesions which have a very high mortality rate, frequently it may be advisable to present all the available facts to the patient or family and leave the decision to them.

In lesions such as mitral stenosis, most physicians like to wait until the patient begins to manifest progressively worsening symptoms. However, no surgeon likes to be presented with a patient in the end stages of failure when surgery may have been done at an earlier point in the course of the disease. So the physician should not wait too long in arriving at his decision to send his patient to the surgeon.

There are many other lesions which have been successfully treated by surgical methods, but because they have not yet gained universal acceptance or because they are associated with relatively high case-fatality rates, they have not been included in this discussion.

Summary

As initially outlined, this discussion was not intended to be all inclusive or exhaustive, but to cover the more important lesions in a general fashion which would permit a positive approach to the management of a patient with a cardiac murmur.

An important factor in providing patients with cardiac lesions with every therapeutic approach available is the alertness of the general practitioner. Without need for any complicated equipment, the general practitioner should be able to initiate the sequence of diagnostic events resulting in final definition of the questions posed in the beginning of this paper. How far along this diagnostic path, he wishes to conduct the study, will depend on the limitations of his own experience and interest in the field.

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CHLORPROMAZINE IN TETANUS

"Chlorpromazine has been reported as of therapeutic value on the muscle spasm of local tetanus in the rabbit. Two independent reports in Lancet (1: 987 and 991, May 10, 1958) discuss its use in human tetanus. The first report by Laurence and his associates in South Africa was of a controlled trial, in which chlorpromazine was compared with barbiturates. In a series of 75 tetanus patients given one or other drug at random there was no statistically significant difference in the outcome of the disease. Chlorpromazine was found easier to manage than barbiturates, because it controlled the convulsions without causing loss of consciousness or clinically noticeable respiratory depression. In the second report from Dundeen, Scotland, Barr reports an unusual case of tetanus in a girl of 11, in which muscle spasm was limited to the jaw and one leg. Full sedative doses of phenobarbitone did not relieve the spasm but chlorpromazine did. Doses of 20 mg, by slow intravenous injections reduced trismus for five or six hours. A combination of phenobarbitone and chlorpromazine might be superior to chlorpromazine alone."

The Canadian Medical Association Journal, June 1, 1958

EDITORIALS

PERRIN H. LONG, M.D.



WHO IS KILLING THE GOOSE?

In the past few years, publicists for labor, politicians (especially congressmen of the so-called liberal group), certain self-appointed representatives of the public, and paid executives of organizations which purport to represent the opinions of the majority in certain groups of our people, have been extremely and increasingly vocal about the cost of medical care. As a matter of record within less than half a dozen years, in an attempt to do something about the problem, Congress has extended veterans' medical benefits, passed the dependents of personnel in the Armed Forces medical care bill (MEDICARE) which was signed by the President and has been in operation for several years, turned down the Administration's first gesture towards National Health Insurance, and refused, up to the moment, to pass the Forand Bill, which would provide some medical benefits for certain individuals who were over sixty-five years of age. In addition to these proposed or enacted measures, other bills dealing with medical benefits have been introduced, some of which would produce a more governmentally supervised type of the practice of medicine in this country than now exists in Great Britain under the National Health Service.

Why all of this hullabaloo in a period in which the people of our country have been more prosperous than those of any nation in the history of the world? It's not hard to find out if one will but look at the figures. First, all indices of the cost of living show that the cost of being ill, if one has to go to hospital, have risen more in the past ten years than almost any of the other components of the various indices. It must be said at this point that on a percentage basis, doctors' and dentists' fees for service have not increased at all to the same degree as costs of hospitalization during the same ten-year period. Let's take a look at the data.

- 1. The number of full-time employees required to take care of patients has gone up in the last few years. In 1946, on a national de, one hundred and forty-eight employees the needed to take care of one hundred tents; now the number is two hundred and eleven, and there is every reason to believe this number will increase.
- 2. Full-time hospital employees' salaries have shot up (despite union organizers' protestations to the contrary) since World War II. Personnel costs now consume from sixty to seventy percent of most hospital budgets. At the time of this writing union organizers are attempting to force six voluntary hospitals in New York City to recognize them as bargaining representatives for the employees of those hospitals. If their efforts are successful, and their proposals for bargaining presage what is going to happen in the country, then one can predict with certainty that there will be another sharp rise in the cost of hospitalization. Union organizers frequently try to give the impression that salaries and wages of full-time hospital employees have not increased over the years. A look at the record belies this. In one Boston hospital, dietary aides got \$11.60 per week plus meals in 1942. Now they receive \$34 plus meals. Staff nurses' (with maintenance) pay rose from \$19.60 a week to \$70 a week during the same period. Secretaries in that hospital received an average of \$23.42 a week in 1942. Now they average \$53.50. Wages paid employees have doubled, tripled, or in certain instances quadrupled during the same period. In the New York Municipal Hospital system, in which the unions are recognized and most employees belong to them, the lowest wage is a little over fifty-three dollars a week, and at that, the unions are organizing boycotts, picketing, etc., in attempts to get increases in pay or fringe benefits for their members. Costs will be astronomical.
- 3. The cost of materials used in hospitals has increased remarkably over the past few years. Everybody knows that food has gone up. The hospital drug bill, what with the use of antibiotics, "tranquilizers," steroids, etc. has

- increased remarkably over what it was in 1940. Other types of supplies have gone up in price, and finally the cost of equipment, especially that needed for modern laboratory diagnosis, has skyrocketed.
- 4. The next item to be considered in this question of hospital costs is the patient himself. Is he different, and can we say that he has "gone up in price," i.e., have his desires and demands so changed as to make him an important factor in hospital costs? The answer is, "Yes, without question!" To begin with, the patient, being, decade by decade, a better educated individual, has lost his fear of hospitals, and feels that he should be placed in one almost every time that he is ill. I sometimes believe that the desire to go to hospital reflects a status and prestige pattern on the part of the individual patient. And the trouble is (from the point of view of rising hospital costs) when this better-educated person gets to hospital he now demands more. He wants a private room (often with bath), a T.V. set, radio, and his own telephone. If these are not provided, then his satisfaction with the hospital decreases, and of course all of these items increase the cost of his hospitalization. Furthermore, as a result of the greater knowledge of medical matters which the modern patient possesses, patients demand the most modern treatment, and this means expensive equipment and more technical help.
- 5. With more and more people going to hospital, new hospitals are having to be built and old ones expanded in a period in which construction costs are at their highest, as are also the costs of maintenance and repair. Hospital construction costs frequently run over twenty thousand dollars per bed. It's important to remember, from a planning point of view, that almost one hundred dollars of new hospital construction must be provided for each new person who enters a community.
- The rise in the number of elderly people, who require more frequent and more prolonged hospital care, will increasingly constitute a factor of importance in the expanding costs of medical care.

7. And finally, these increases in costs are forcing hospitals to assume bigger obligations for charity work, and at the same time unpaid bills due to hospitals are mounting. For example, in Boston, some six million dollars' worth of unpaid hospital bills are held by the teaching hospital. The chances are that little of the money due these hospitals will be collected eventually.

It is difficult to know just what can be done about this situation. One drain on hospital budgets, namely charity work, should be eliminated by forcing cities, counties or states to pay the full cost of inpatient and outpatient hospital care of all indigent patients who are clients of public assistance. Blue Cross benefits (as well as its rates) will have to be increased until the full costs of hospitalization are met by insurance. Better business methods must be introduced into hospitals, and the Blue

Cross organizations should be leaders in seeing that this is done. This organization should stop functioning essentially as a paying agent, and see that their subscribers' money is spent efficiently. Hospitals should experiment more widely in the provision of intense, regular, or minimal care programs for various categories of illness and patients.

Physicians can help, too, by keeping patients who have Blue Cross coverage out of hospital unless they need intense or regular hospital care. They should so organize the patient's care that hospitalization-time will be kept to a minimum. They should not, under any pretext, use Blue Cross benefits which a patient may have to put the non-ill patient in hospital for diagnostic studies.

1. Griffith, R. Baston Sunday Herald April 12 1959.

DON'T LET IT HAPPEN TO YOU!

The evidence is now in. It can be said with certainty that three or more inoculations with Salk vaccines will give vaccinated individuals high levels of protection against paralytic poliomyelitis. Furthermore, it can now be stated categorically that in 1956, 1957, and 1958, this vaccine was safe, and as far as it is humanly possible to predict will continue to be safe.

However, human nature being what it is, we will continue to have paralytic poliomyelitis and deaths therefrom, not because people are stupid or recalcitrant, but simply because they are poor, do not understand the problem, are too busy to take the trouble to be vaccinated or have their children vaccinated, are "just careless," or because they feel that they or their community can't afford it. That this is true was completely evidenced by what happened in West Virginia, northern New Jersey, and Detroit in 1958. In these and other, smaller, areas the disease was rampant, and accompanied by a high rate of paralysis.

Who developed the disease with paralysis

during the outbreaks in 1958? Well, in Detroit, the "paralytic cases were concentrated among preschool children in the non-white population in the areas of poorest socio-economic conditions, greatest crowding, most poverty, and lowest levels of polio immunization. Similarly, during the Virginia-West Virginia outbreaks, in the same year, a majority of paralytic cases were in children under five. In this outbreak area, too, living conditions have been reported to resemble urban slums in many respects (dense crowding, poor housing, etc.), and are characterized by an exceptionally low level of inoculation." ²

Now, I dislike saying it, but our profession must bear a certain responsibility for what happened last fall. Three or four years ago, following the demonstration of the protective value of the Salk vaccine, certain public-health authorities considered the establishment of broad programs for the vaccination of the children of this country, but here again, as

^{2.} Progress in Health Service, Vol. III, No. 3, March 1959.

happens, to my mind, too frequently, objections were interposed by local medical societies on the grounds that such programs represented intrusion by the public-health authorities into the private practice of medicine; and many of these programs were either eliminated or reduced in scope as a result of these protests. While the vaccine, in terms of cost when compared to the costs of having paralytic polio, is cheap, still as a mass immunizing agent it was not exactly inexpensive. When the physicians' costs for administering it, which, to my own knowledge, ran from two to ten dollars per injection, were added, the cost of vaccinations while not prohibitive, for a number of people was something to think about.

Furthermore, ever since mass inoculations or vaccinations for the prevention of disease have become practicable it has been noted that in this country the response of civilian populations to these protective measures has been poor, unless an epidemic was raging or propaganda for inoculation was continuous and intense. For example, in 1946 or 1947 when smallpox was discovered in New York City, it is said that some six million people were vaccinated within a relatively short time. (It was during this scare that the extraordinary

incident of the female restaurant proprietor in Harlem who offered vaccination — with tap water—free with each meal was unearthed by Health Department inspectors.)

The trouble is that associations of physicians generally do not have the money which it takes, or the channels of communication which are required for the continuous propaganda effort that is necessary for promoting a successful inoculation campaign in the mass of the people.

At the moment, the job of protecting the public who are under forty years of age is only about half done. Let's not let public apathy, our own economic interests, nor the economies of our local or state governmental authorities stand in the way of eliminating infantile paralysis. Let's start right now to get our own clientele vaccinated and to see that our local health authorities have the funds necessary to provide for the vaccination of all in the population at risk, who are in the low socio-economic groups. Let's eliminate poliomyelitis as a crippler of children and adults. And above all, remember, Doctor, don't let it happen to you, or your family, or your patients! If it does, you have only yourself to blame! Start vaccinations or give those booster doses today! Next week may be too late!



at "Coroner's Corner" Page 47a

Read the stories Doctors write of their unusual experiences as coroners and medical examiners.

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MEDICAL TIMES





THE LONG AND SHORT OF IT

From Your Editor's Reading

Salt Metabolism in Hypertension

"Sodium chloride metabolism in essential hypertension is abnormal. Patients with essential hypertension may have a slightly elevated serum sodium concentration, expanded total body sodium content, and increased amounts of sodium and water in their arterial wall.

Hypertension may be alleviated by sodium depletion. Chlorothiazide, a potent natruretic agent, may exert an antihypertensive effect in both hypertensive animals and patients. This drug potentiates the effect of various antihypertensive regimens. The concomitant administration of chlorothiazide reduces the requirement for ganglionic blocking drugs in the treatment of hypertension. Sympathectomized patients are unusually responsive to the blood pressure lowering of chlorothiazide.

The increased renal tubular rejection of sodium, chloride and water in response to salt loading, which is present in essential hypertension, is felt to be the result of the elevated blood pressure and not its cause. There is no evidence that water excretion, occurring in excess of sodium excretion, causes a 'relative retention' of sodium in the majority of hypertensive patients.

The hypothesis is discussed that in essential hypothesion the sodium content of certain compartments or tissues, possibly vascular smooth muscle, may be increased and lead to the elevation of the blood pressure. The effectiveness of chlorothiazide in the treatment

of some cases of hypertension might be through its ability to deplete these tissues of sodium; in other instances it appears to act through depletion of the plasma volume."

JOHN H. WELLER AND SIBLEY W. HOOLER Annals of Int. Med. (1959) Vol. 50, No. 1, P. 112.

Chlorothiazide in Control of Ascites in Hepatic Cirrhosis

"Chlorothiazide has had only limited clinical trials in patients with ascites and cirrhosis. In a series of cirrhotic patients Laragh et al. (1957) found a good diuresis in three, a partial response in three, and no effect in three. Other authors have described only one or two cases, and the results are variable. In our patients the response was proportional to the severity of the fluid retention, and those with very low initial sodium outputs showed little or no diuresis. These patients were by no means in a 'terminal state' (Hecker and Sherlock, 1956), and the majority responded well to a mercurial diuretic. Patients with less avid sodium retention often showed a dramatic diuresis after chlorothiazide. All these in-patients were receiving a strict low-sodium diet. Out-patients cannot usually achieve such a regime, and here chlorothiazide may be useful, although two such patients became refractory to the drug after a few weeks' treatment. In such instances alteration with mercurial diuretics may be valuable. Chlorothiazide is convenient to use and

patients prefer it to mercurials. The cost, however, must be remembered, for 2 g. of chlorothiazide for three days costs 7s. 6d., in contrast to 2 ml. of mersalyl, which costs 2 d.

Hypokalaemia has been well recognized as a complication of chlorothiazide treatment of congestive heart failure (Bayliss et al., 1958) and also been reported in cirrhotic patients (Laragh et al., 1957; Richards, 1957; Schreiner and Bloomer, 1957; Slater and Nabarro, 1958). It was a consistent finding when our patients had a good diuresis. Hypokalaemia can be partly controlled by potassium supplements, and 3 g. of potassium chloride daily should be given to all patients receiving the drug. In some instances, however, the potassium loss far exceeds this amount and with continued therapy hypokalaemia becomes inevitable. The potassium supplements can be increased to 6 g. of potassium chloride daily, but the patient may not tolerate even this amount of an essentially nauseating substance.

The large number of patients developing impending or actual hepatic coma was unexpected, although single instances have been reported by Richards (1957) and Castro (1957). The high incidence of a past history of hepatic coma in our patients (7 out of 13) was not more than is usually encountered in cirrhotic patients with ascites. Fluid retention can be regarded as a bad prognostic sign, and other signs of liver failure such as jaundice or neuropsychiatric complications are therefore common. Precoma of minor degree can easily be overlooked if the possibility is not considered. Abnormal electroencephalographic recordings are even more frequent. This distinction of patients with a past history of precoma was of practical importance, for no patient 'reated with chlorothiazide developed these complications unless there was this tendency. The drug should be given extremely cautiously if such a history is elicited or if neuropsychiatric abnormalities can be detected.

The mechanism of the hepatic coma is uncertain and will be discussed more fully later (Read et al., 1958). It could not be related to failure of the diseased liver to metabolize

chlorothiazide, for blood levels in cirrhotic patients did not differ from those obtained in normal subjects after a similar loading dose. Chlorothiazide in vitro has carbonic anhydrase inhibitor properties (Beyer et al., 1957), and this is confirmed by the finding of an increased urinary excretion of bicarbonate and an accompanying rise in urinary pH after its administration. The carbonic anhydrase inhibitor acetazolamide induces hepatic precoma in some patients with liver disease (Webster and Davidson, 1956), and this has been related to a blockage in uptake of ammonium by peripheral tissues (Dawson et al., 1957). Chlorothiazide might act in a similar way, although perhaps with less potency. Episodes of hepatic coma and precoma associated with chlorothiazide therapy have usually been accompanied by an clevation of the fasting arterial ammonium level (Read et al., 1958). It seems unlikely that this is the only way in which chlorothiazide is toxic, for the effects are not proportional to the dose, and in some instances recovery may ensue when potassium is given.

A correlation was noted between the extent of the diuresis and the development of precoma. Patients with cirrhosis and ascites may develop hepatic precoma after abdominal paracentesis, and, although the mechanism is not clear, alterations of osmolarity and loss of electrolytes must be considered. A diuresis of comparable amount may act similarly. Potassium loss may be of particular importance (Read et al., 1958).

The potassium deficit associated with neuropsychiatric complications in cirrhotic patients is of the order of 300 mEq. This is a relatively small amount, but the brain of a patient who has experienced hepatic precoma may be particularly sensitive to any metabolic insults, of which hypokalaemia may be one (Sherlock, 1958). It is unfortunate that therapy is particularly dangerous in the group having the most satisfactory diuresis.

Chlorothiazide, 2 g. daily, was administered on 15 occasions to 13 patients with cirrhosis of the liver and ascites. On nine occasions the diuretic response was regarded as good; in the remaining six instances the response was poor. Refractory patients had an initial urinary sodium output of less than 1 mEq daily. Two refractory patients to chlorothiazide responded well to mersalyl.

Urinary potassium output increased and all patients not receiving potassium supplements developed hypokalaemia. Impending or actual hepatic coma was noted in 7 of the 13 patients treated. It was usually associated with a good diuretic response to chlorothiazide and in those with a previous history of hepatic precoma. The possible mechanisms of this reaction to chlorothiazide are discussed.

Four out-patients were treated for longer periods with intermittent chlorothiazide and continuous potassium supplements. Neuropsychiatric changes were not seen, but two patients became refractory to the drug.

Continuous chlorothiazide therapy should not be given to cirrhotic patients outside hospital. Potassium chloride (3-6 g. daily) should be given to all patients with cirrhosis receiving the drug. Particular care should be taken in patients with a previous history of the neuropsychiatric complications of liver disease."

A. E. READ, R. M. HASLAM and J. LAIDLAW British Medical Journal (1958) No. 5077, Pp. 965-66.

Studies on the Mechanism of Hypotensive Action of Chlorothiazide

"The hypotensive and natriuretic effect of chlorothiazide therapy in 9 hypertensive subjects is compared with hemodynamic control of the obtained blood-pressure fall in 7 of them. The drug caused a mean cumulative negative sodium balance of 3.8 millequiv. per kilogram of body weight, most of this amount being lost during the first three days of therapy. All subjects responded by a lowering of blood pressure, the average decrease being 17.7 per cent for the systolic and 10.1 per cent for the diastolic. Changes in the blood-pressure level followed changes in sodium balance, although the magnitude of the hypotensive effect could not be quantitatively related to the amount of sodium lost from the body.

The blood-pressure fall usually resulted from a lowered peripheral resistance, without significant impairment of the cardiac output. The possibility that chlorothiazide lowers the peripheral resistance by reducing the sodium content in arteriolar walls is discussed."

D. ALEKSANDROW, W. WYSZNACKA and J. GAJEWSKI The New England Journal of Medicine (1959) Vol. 260, No. 2, P. 55.

Effects of Chlorothiazide on Specific Renal Functions in Hypertension

"In addition to its recognized saluretic and kaluretic properties, prolonged oral administration of chlorothiazide to hypertensive patients often depresses glomerular filtration, causes an increase in blood urea that may be disproportionate, and, in the face of decreased filtered sodium load, tends to maintain a normal rate of sodium reabsorption. It also causes an increase in free water reabsorption, which is evidenced only relatively in the prolonged experiments but which is also observed, as an absolute increase, in tests done shortly after intravenous injection of the drug. The renal hemodynamic status during prolonged administration may be attributable to sodium depletion as such. However, by analogy with renal hemodynamic status in nephrosis, hypovolemia may be the primary factor."

A. C. CORCORAN, CATHEL MACLEOD, A HARIET P. DUSTAN, IRVINE H. PAGE Circulation (1959) (Vol. XIX, No. 3, Pp. 358-59.

Early Observations on the Diuretic Effect of Oral Chlorothiazide

"Oral chlorothiazide was given in doses of 1 g, twice daily to 20 patients with heart failure. In 17 of these 2 ml, of a mercurial diuretic was given parenterally and in 16 it was given initially. To compare the value of these diuretic agents varying courses of intermittent therapy were used. The response obtained was measured as the diuretic index over a two-day period.

Chlorothiazide produced a good therapeutic effect in all cases, and our results suggest that it is as effective as the parenteral diuretics, or more so.

In the short and intermittent courses of treatment which we used only a slight fall in serum potassium was recorded in five patients. Toxic effects were not observed in any of our patients.

D. WYNNE DAVIES and BYRON EVANS British Medical Journal (1958) No. 5077, Pp. 969.

The Effect of Chlorothiazide on Human Gastric Secretion

"In 12 of 18 studies on human gastric secretion a fall in free acid occurred after chlorothiazide was administered. In 3 of the 12 patients the decrease was definite, i.e., 60-100 percent of basal secretion, in 4 of the results were equivocal, and in 5 the fall was not significant. The decrease in free acid was transient, lasting for 1 hour."

PHILIP KRAMER and BEDROS MARKARIAN The Am. J. of Digestive Diseases (1959) Vol. 4, No. 2, P. 135.

An Evaluation of Chlorothiazide in the Treatment of Edema in Pregnant Women

"We have not studied nonpregnant edematous patients and cannot make any direct comparisons, but chlorothiazide seems to be less effective in pregnant edematous women than it is alleged to be in other patients. This seems to be an almost general observation on the effects of diuretic drugs, for Assali, Herzig, and Singh found ammonium chloride to be less potent in causing salt loss in toxemic women than in others. Dieckmann wrote that the same is true of mercurial diuretics.

Chlorothiazide increased the sodium excretion in 6 of the 7 patients studied, although the effect decreased progressively from day to day, i. e., drug resistance developed within a few days. When the drug was restarted, after a 3 day rest, natriuresis again occurred in the 3 patients studied in this way.

The one patient in whom chlorothiazide was

ineffective was the only one in the series with pre-eclampsia. One case does not prove that patients with pre-eclampsia are refractory to the drug. Actually, we have observations in 2 other women with preeclampsia. In one, the sodium excretion in the 24 hour control period was 28.2 mEq. In the first day on the drug (sixth hospital day) no more than two-thirds of the urine output was saved, as judged from the creatinine excretion, but the measured sodium output was 75 mEq. In the next 3 days, with complete urine collections, the sodium excretions were 125, 101, and 86.8 mEq. The other patient had severe pre-eclampsia and was started on chlorothiazide as soon as a control 24 hour urine specimen had been obtained. On the control day, she excreted 42.7 mEq. of sodium and in 3 days on the drug the sodium excretion was 142, 117, and 50.9 mEq. Thus, 2 of the 3 pre-eclamptic patients did respond to the drug with natriuresis.

In pregnant edematous women, bed rest and dietary sodium restriction alone have a good diuretic effect. Negative sodium balances are maintained for several days (10 days in the 2 patients followed that long).

Chlorothiazide stimulates sodium and chloride excretion in pregnant edematous women, after the major effect of bed rest and a lowsodium diet has occurred.

Resistance to chlorothiazide develops progressively from day to day. It seems to disappear after a rest period of 3 days (possible less.)"

LEON C. CHESLEY, Ph.D., and LEOPOLDO UICHANCO, M.D. American Journal of Obstetrics and Gynecology (1958) Vol. 76, No. 3, Pp. 471-72.

The Hypotensive Effect of Chlorothiazide

"Chlorothiazide had a slight but definite hypotensive action. There was no significant difference in the mean blood-pressure during administration of dummy tablets and during the control period (207/121 and 207/119 mm. Hg. respectively), but there was a fall when chlorothiazide was given (to 177/109 mm. Hg.) Analysis of variance indicates that this

change, though small (-30/-11 mm. Hg.), was statistically significant. Moreover, the results do not exclude the possibility that a longer period of chlorothiazide would have produced a greater decrease. The downward trend of the mean values during the 2 months when it was given, suggests that it might have done so."

R. HALL, B.B., S. G. OWEN, M.D. The Lancet (1959) Vol. I, No. 7064, P. 130.

The Use of Chlorothiazide in the Nephrotic Syndrome

"In a study of 10 patients with the nephrotic syndrome associated with various types of renal disease, orally administered chlorothiazide was a successful, and sometimes dramatic, diuretic agent. When properly integrated with other well-established clinical procedures, it should prove to be therapeutically beneficial in some patients with the nephrotic syndrome and should at least be given a therapeutic trial. Whether or not it has any 'curative' value remains to be determined, but it may prove valuable indirectly by reducing arterial blood pressure and eliminating the water-logged environment of vital cells of the body, including those of the nephron.

These studies reveal the diuretic activity of orally administered chlorothiazide in the nephrotic syndrome due to various renal disease. It approached the effectiveness of the mercurial diuretics when administered parenterally in other types of edema and in general was much more effective than mercurial diuretics in these patients. The detailed mechanism of its actions remains obscure. The carbonic anhydrase activity apparently is of minor significance is of minor significance in vivo. The natruretic, chlorouretic, kaluretic, and water-diuretic effects resembled, in general, those of the mercurial diuretics. Its action was prompt and fairly well sustained, and tolerance developed slowly in one patient. It produced less potassium diuresis than sodium, chloride, or water diuresis. Although its toxic effects are yet little known, it was nontoxic even during prolonged administration in these patients. Electrolyte

imbalance apparently is its greatest danger, but with careful surveillance these patients did not experience any deleterious effects. As with every new potent drug, many years of experience in many subjects under various circumstances are necessary before its actions and detrimental side-effects become known.

Nevertheless, careful use of chlorothiazide proved to be extremely beneficial in patients herein reported. Physicians have hesitated to use the mercurial diuretics in the presence of renal disease, especially in the presence of acute and subacute inflammation. In the few patients reported here and in several others with the nephrotic syndrome, chlorothiazide proved to be nontoxic but therapeutically effective. Thus far, it has proved effective in maintenance of normal hydration in the presence of severe hypoproteinemia and hypoalbuminemia. The patients found the drug simple to take, a distinct advantage over periodic needle punctures in the use of mercurial diuretics.

The number of patients was small and the follow-up period short, and so any 'curative' aspects of the drug in such a variable state as the nephrotic syndrome cannot be evaluated with certainty. Nevertheless, the improvement in the general well-being of some of these patients was impressive. This was particularly true when diligent previous therapy had been ineffective; the patient's legs and body felt heavy; they felt 'swollen' and were depressed and discouraged. Prompt diuresis, loss of the heavy, tight, swollen sensation, and development of a more normal-appearing body resulted in a most pleasing reaction of the patient and his doctor. When this was maintained in the presence of severe hypoproteinemia, the results were indeed impressive.

Any conclusion regarding beneficial effects related to the renal tissue itself would be purely conjectural at this time, especially in view of the spontaneous variations of the disease itself and associated therapeutic measures, such as bed rest. However, as measured by the general clinical state of the patient and the urinary findings, two patients were definitely improved beyond merely the loss of edema. Properly in-

tegrated with corticotropin (ACTH) or corticosteroids, bed rest, and other general procedures, chlorothiazide may prove to be extremely valuable and reliable. Surely, the drug will not be effective in all patients with the nephrotic syndrome or in all forms of the syndrome, but it is gratifying to have a relatively innocuous, potent oral diuretic that is effective to some extent in the relatively large proportion of patients and even dramatically effective in some.

Others have noted that chlorothiazide reduced the arterial blood pressure in the patients with benign essential hypertension, but it was reduced only in one of our patients who received reserpine concurrently.

Another interesting aspect of these studies is the important physiologic implication of eliminating all edema and maintaining the normal hydrated state in the presence of severe hypoproteinemia. This is further compatible with the extremely dominating role of the kidneys, whether directly or indirectly related, in maintaining the normal state of hydration despite profound imbalance of the Starling factors of oncotic and hydrostatic intra- and extravascular forces. The Starling hypothesis, as generally interpreted, would be incompatible with a normal state of hydration in some of these patients. These studies clearly indicate that the Starling factors are not the only important ones and at times not the dominating ones. The Starling concept needs reevaluation and other factors, including but not only the renal one, require careful study and reconsideration. Furthermore, in view of these observations, involving the oncotic forces and others involving the hydrostatic one, the Starling concept should be studied in which interstitial chemical, cellular, vascular, endothelial, endocrine, and renal functions are adequately considered."

G. E. BURCH and H. AUBREY WHITE, JR. Arch. Int. Med. (1959) Vol. 103, No. 3, Pp. 50-51, 378-379.

Rubella and Pregnancy

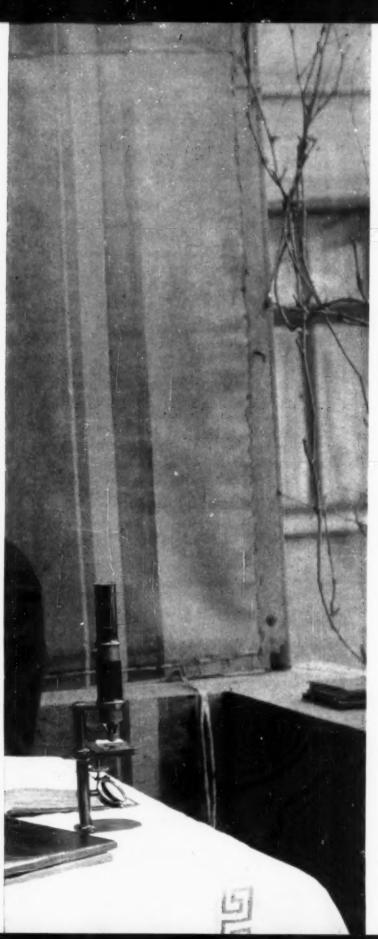
- "1. In our series 47 women had rubella while they were pregnant.
- Nine of these were affected in the second and third trimesters and gave birth to normal children.
- Seven women who had rubella in the first trimester had spontaneous or induced abortions.
- 4. Thirty-one women who had rubella in the first trimester of pregnancy carried to term.
- 5. Twenty-five of these 31 had normal children, and 6 babies were born with congenital defects. Of these 6, one was born dead, 2 died at 3 weeks of age, and 3 survived.
- 6. The incidence of abnormal babies born to women who carried to term after having rubella in the first trimester of pregnancy was 19 per cent, or one in five."

HARRY OXORN

American Journal of Obstetrics and Gynecology (1959) Vol. 77, No. 3, P. 631.







Remember When...

REMEMBER WHEN ...

your skeleton went everywhere with you? As the subject of this picture has written, "I considered the skeleton to be my closest friend; it was a great help in digesting the dry study of Anatomy."

Osteology, you fingered and felt the bones of your skeleton with your eyes closed, so that when the oral "spot" examination was given, you would have been able to name any bone in the body in Stygian darkness by the sense of touch alone?

Toldt's Anatomical Atlas were known to all in Anatomy?
This Atlas has not been reprinted for about twenty years.

. . . Anatomy was the great stumbling block for would-be doctors?

professional - looking pictures taken to impress family and relatives?

HEALTH WANTED

... for MS Patients

MS—Multiple Sclerosis, mysterious, insidious killer and crippler. Here's a report on the voluntary agency which is mustering men and money to beat this dread disease.

Undoubtedly there is only one voluntary health agency in existence which got its start from so unlikely a source as a classified advertisement. The agency is the National Multiple Sclerosis Society. The ad which accounts for its origin appeared in the public notice section of the New York Times in 1945, just a few days before VE Day.

It read, "Multiple Sclerosis. Will anyone recovered from it please communicate with patient."

It was placed by two sisters who knew the ravages of MS at first hand—their brother was a victim of the disease. At the time, they had no idea of founding a society. They were simply hunting for a treatment for their brother. Like many MS patients of those days he had consulted physician after physician.

From only one reply to the ad did a lead develop. It reported that an MS patient had recovered from severe incapacity and remained well for many years. The trail led to a certain doctor's office, then ended abruptly.

It turned out that the treatment which the doctor had used on one patient, who thereafter had a remission, had been used on about one hundred other patients with no significant benefit.

Such a blind alley — searching and disappointment—was unfortunately only too typical of what confronted MS patients and their families a decade or so ago.

In 1945 there was no clearing house for information on MS. There were a number of well-established voluntary agencies concerned with some of our major health problems — notably American Cancer Society, the National Foundation for Infantile Paralysis and the National Tuberculosis Association—but no such organization interested in MS existed.

Although MS was known in 1945 to be a progressive, crippling disease, knowledge about the disease process involved was far from specific. How many persons suffered from it, how long patients might be expected to live after onset, what treatments might be beneficial, all were matters for speculation. Furthermore, many misconceptions had grown up about MS. It was hard to diagnose. Its symptoms were sometimes mistaken for those of other diseases.

It is no wonder that MS patients often were overwhelmed by feelings of utter helplessness and hopelessness.

An exchange of letters, in response to the ad in the *Times*, helped change this bleak picture. A nucleus of interest in MS was created and from this nucleus an organizing committee to form the Association for Advancement of Research on Multiple Sclerosis, Inc. (AARMS) was set up in March 1946.

The purposes of the new organization were set forth as follows:

- coordinate research efforts on multiple sclerosis in this country and abroad
- gather statistics on the prevalence and geographic distribution of multiple sclerosis
- act as a clearing house for information on the disease
- collect funds to stimulate and support research on the family of diseases to which multiple sclerosis belongs.

A modest room to house the AARMS headquarters was found at the Academy of Medicine Building in New York City. There, an executive secretary and one other volunteer established an office. The executive secretary was Sylvia Lawry, one of the two sisters who had placed the ad in the *Times*. She is now executive director of the National Multiple Sclerosis Society, the name which the organization assumed in 1947.

The program designed to put the purposes of the new organization into effect called for undertaking several activities immediately. A campaign to acquire more members was one. Two mailing pieces were planned, to picture MS and what was known of existing forms of treatment. One was for fund solicitation, one for educational purposes. A drive was started for more volunteer workers.

Another step of major importance was the formation of a medical advisory board. Neurologists who were known to be interested in MS were invited to serve on the board and AARMS was fortunate in receiving one hundred percent favorable response to these invitations. The first meeting took place February 21 and 22, 1947.



One of 22 fellows appointed by MS, Michael Sribney, Ph.D., is shown here in his laboratory at the University of Wisconsin,

It is notable that several of the names which appeared on the original list of MAB members still are included as active or as honorary members of the body. They are Richard M. Brickner, M.D., O. R. Langworthy, M.D., Roland P. Mackay, M.D., Tracy J. Putnam, M.D., Gabriel Steiner, M.D. and Henry W. Woltman, M.D. MAB members make a generous contribution of time and counsel in performing their board services, without any remuneration except the satisfaction of helping a worthy cause.

The Association's board of directors was formed meanwhile and headed by Carl M. Owen of the law firm of Willkie, Owen, Farr, Gallagher and Walton.

The first publicity release drew a flood of letters from all over the country. They reported on the way MS was taking its toll. They told of physical symptoms and emotional symptoms. They reported on treatments which had been tried — special diets, baths, medication with vitamins and histamines. And they asked many, many questions, all reflecting the state of knowledge—or lack of it—about MS at the

time and attesting the crying need for an organized national effort on behalf of MS.

Soon, three studies were started under the sponsorship of AARMS:

- 1. An investigation into geographic and climatic distribution of MS. (MS was believed to be more common in the North Temperate Zone, an assumption which now appears to be affirmed.)
- 2. An investigation of whether or not MS is an infectious disease. (The cause of MS is so far unknown.)
- 3. An investigation into conditions resembling MS in animals in which special allergic states were induced. (Much more work along this line has been done since then.)

Official sanction for the MS Society came from the American Medical Association in January 1948, when it adopted a resolution which said in part, "Resolved. That the American Medical Association endorse officially the attempt to educate the public concerning the disease and to undertake investigations leading to a solution of its problems in qualified hospitals and medical centers."

Cornelius H. Traeger, M.D., was appointed the Society's first medical director that same year. Under his direction, the Society branched out in several directions and expanded its activities. A statistical survey of MS on a national scale appeared to be a pressing need and the Society's board of directors recommended that Dr. Traeger organize such a project. It was inaugurated in cooperation with the U.S. Public Health Service.

Also in 1948, a medical representative of the Society visited some countries in Europe and the Middle East to lay the groundwork for exchange of statistical data on MS and information on pertinent research efforts.

When it first began its work, the Society was dedicated entirely to furtherance of research and the raising of funds to support research efforts. As membership increased throughout the United States, it became apparent there was also a dire need for services to MS patients.

It was therefore decided that chapters should be formed in various communities to cope with

this need. The first two were established in California and in Connecticut. These chapters -and the others formed later-were pledged to the more personal phases of MS work. Besides patient services, they work to enroll members, hold recreational meetings for MS patients, educate the public about MS and cooperate with local medical organizations and other community groups to cope with MS problems. The patient-finding surveys which chapters conduct are valuable in several ways. They let MS patients in the area know about the chapter. They are helpful to the chapter in planning its patient-service programs. And they add to statistical data on prevalence and geographical distribution of MS throughout the country.

Another phase of the MS program was the setting up of clinics. The first ones were established in Boston at the Beth Israel and Boston State hospitals and at the Albany (New York) Hospital and Albany Medical College. At the latter, an investigation of statistical and clinical data on MS was undertaken. In Boston clinic, a research project was set up to study the use of vitamins in treating MS patients. At both clinics thorough examinations of MS patients were provided.

The vitamin study—like many other evaluations to come later—proved inconclusive. The benefits noted in some cases where vitamins were used seemed to be no more widespread than the rate of spontaneous remissions in MS. Here, as elsewhere, remissions presented a difficulty in studying the effects of treatment on patients. It must also be noted that the MS picture is complicated by the fact that the interest and solicitude which a patient may receive when under treatment can shape up into large doses of reassurance and hope—often decidedly beneficial but deceptive when an evaluation is attempted of forms of therapy being used.

This is true of all diseases but particularly so of chronic debilitating ones.

During 1948 the medical advisory board expanded by including in its membership not only clinicians but also medical scientists working in the fields of biochemistry, physiology, pathology and bacteriology.

The Society's move to larger headquarters was further evidence that its work was expanding. In 1948 it took offices at 270 Park Avenue, which it held until late in 1956 when a move was made to 257 Fourth Avenue, New York.

In 1948 the Association for Research in Nervous and Mental Diseases held a conference on MS and demyelinating diseases at which a report was made on a year's study of major aspects of MS. The study concerned theories of the cause of MS and possible avenues of research.

The ARNMD had held a similar conference twenty-seven years earlier, at which time it was evident that there was much confusion as to the nature of MS and that a better understanding of clinical and pathological features of the disease was needed.

Previous attempts to accumulate knowledge about MS date back to about 1835. During that period three men were observing and noting down facts about the disease, which had not been differentiated in medical literature up to that time. Each was unaware of the existence of the others or of their interest in the disease. One was a Paris physician, Jean Cruveilhier. The second was a London physician, Robert Carswell. The third was Sir Augustus Frederick d'Este, a cousin of Queen Victoria, who for twenty-five years kept a diary of his pilgrimages in search of a cure for what later was considered to be the first known case of MS. At the time it was a puzzle to all the physicians he consulted in England and on the Continent. Sections of the d'Este diary did not come to light until it was turned up by someone who fortunately realized its value dura World War II wastepaper drive.

It was more than thirty years after Carswell and Cruveilhier began their studies of MS that visible progress was made in accumulating knowledge about the disease. In 1868 the famous French neurologist Jean Charcot summarized the basic pathological features and diagnostic criteria of MS.



"How can we help?" MS worker offers local chapter aid to mother of three.

The 1948 conference of the ARNMD pointed up the fact that there had been wide-spread increase of interest in MS. Treatment procedures were recognized to be many and non-specific. The etiology of the disease still was undefined. There was much yet to be done on the road of knowledge of MS.

In 1949 the MS Society began to bring pressure to bear in another area. It pioneered in backing legislation to set up a governmental institute which would foster and subsidize research on all neurological diseases, including MS. It was not until the middle of 1950 that these efforts bore fruit. At that time President Harry S. Truman signed the bill which established the National Institute of Neurological Diseases and Blindness under the U. S. Public Health Service.

Five years after the MS Society was incorporated in March 1946, its first printed annual report was able to point to a gratifying amount of progress. In 1951 there were ten chapters in existence and membership had increased to 19,000. Besides a chapter manual and chapter handbook, the Society had issued two important manuals for physicians. They were "Multiple Sclerosis and Its Treatment" by George A. Schumacher, M.D., a member of the medical advisory board, and "Multiple Sclerosis: Applications of Rehabilitation Techniques" by Edward E. Gordon, M.D. Also the Society was developing a Panel of Corresponding Neu-

THEN	and	NOW	

	1947	1959
SOCIETY MEMBERSHIP	750	120,000
MS CLINICS IN U. S.	0	38
CHAPTERS, BRANCHES & UNITS	2	161
ESTIMATED NO. OF PERSONS IN U. S SUFFERING FROM MS AND RE		
LATED DISEASES Un	known	500,000
RESEARCH PROJECTS BEING FINANCED	4	30

rologists. It had acquired more than fifty members, representing twenty-six countries in Africa, Australia, Europe and South America, as well as Canada, Mexico and the United States.

The annual report for 1951 also pointed out that \$324,632 had been spent for research since the inauguration of the Society's research program. That represented forty-seven percent of the total expenditures by national headquarters. It emphasized that the Society had become a clearing house, recognized the world over, for information on MS.

A conference on MS and other demyelinating diseases, sponsored by the Society, was held in New York in 1952. A highlight was a speech by Howard A. Rusk, M.D., director of the Institute for Physical Medicine and Rehabilitation, New York University - Bellevue Medical Center. He said that no time should be lost in rehabilitating MS patients to help them live more productively, while the search for an effective treatment for the disease proceeded. Almost any MS patient can benefit from an intensive rehabilitation program specifically designed for that individual, he said, and pointed out that therapy may include retraining of muscles, exercise, teaching the use of special appliances and more effective means of carrying out daily activities.

In 1952 results of a questionnaire sent to MS patients were compiled. Perhaps the most controversial question put to patients was one which asked, "Do you think patients with MS should be told of their diagnosis?" The answer was a resounding, "Yes!" Eighty-nine percent were in favor of knowing the truth about their

diagnosis. They believed this helped them better to adjust to MS, to cooperate in therapeutic efforts and to avoid blind alleys of shopping around for treatment.

The answers which patients gave to a question about why they had become members of the Society also were illuminating. They said they not only wanted to keep in touch with progress in research and problems common to MS but also wanted the satisfaction of being part of a movement which was helping other people.

In 1954 the first meeting of the Panel of Corresponding Members of the National Multiple Sclerosis Society was held in Lisbon. Hans H. Reese, M.D., then chairman of the Society's medical advisory board, reported on activities to date. Also representing the Society at the meeting was H. Houston Merritt, M.D., an MAB member, who is now vice chairman of the MAB and acting dean of the School of Medicine, Columbia University, and director of the Neurological Institute's service of neurology.

Another important event of 1954 was the establishment of the Central Registry of Pathology at Montefiore Hospital, New York, through a grant from the Society. Under the direction of Harry M. Zimmerman, M.D., it is designed to bring together for study an extensive collection of brain, spinal cord and peripheral nerve material from deceased MS patients. In addition, it houses the world's most complete library of clinical and anatomical records of MS cases. It prepares and supplies MS teaching materials for scientific investigators and medical schools and centers.

An equally important step was taken by the Society in the following year—the appointment of the first two Fellows under the fellowship and scholarship program, which had been in the planning stage for some time. The program provides promising young scientists financial support for advanced training at a post-doctorate level. It is a forward looking project, aimed at enlisting and holding physician interest in the field of MS research. The chairman of the fellowship and scholarship committee of

the medical advisory board is H. Houston Merritt, M.D.

That year—1954—with membership, chapters and MS clinics constantly growing, the Society decided to hold a chapter conference. This became an annual event. At the next year's conference the MS Hope Chest was born. Named to symbolize the hope which the efforts of the Society represents to MS patients, it is the annual fund-raising campaign of the Society and its chapters.

In its first year, 1956, the American people contributed \$2 million to the MS Hope Chest in a single year.

A firm policy was established in 1956 that chapters, except those already so committed, should not participate in federated fund raising. The Society believes that the interest of the MS cause is far better served by separate MS educational and fund-raising campaigns. The Society needs large sums of money to support its expanding research program. Participation in federated fund raising would impede its setting aside in advance funds to meet its research budget and its giving assurance to medical schools and other institutions which are conducting research that funds to complete the projects will be available. Greater growth is considered possible by conducting its independent campaign thereby enabling maximum expansion of its research, fellowship, patient aid and educational programs.

In 1956 Thomas L. Willmon, M.D., assumed the post of medical and research director of the Society, which he holds today.

Valuable information came out of a Myelin Conference held under Society auspices in St. Louis in October 1956. Sarah A. Luse, M.D., introduced data on the formation and structure of myelin, the substance destroyed in a disseminated manner in MS. Her electron microscope photographs showed that myelin originates in the glial cells. These photographs showed that myelin is composed of laminated membranes arranged somewhat like shingles on a roof. Formerly it had been supposed that myelin was a structureless lipid mass. With this basic information available, hopes for further progress

in MS research were brightened.

In July 1957, seven divisions of the International MS Panel were set up. At the meeting in Brussels, the National Multiple Sclerosis Society was acclaimed for raising the level of neurology in the United States. Its executive director, in turn, expressed the Society's thanks for the enthusiastic interest shown in MS.

The Society is now truly beginning to realize the growth for which it has been striving. In the year just passed membership stood at 120,-000, with chapters, branches and units totalling one hundred and sixty-one. There have been one hundred and three research grants made since the research program was inaugurated and a total of twenty-two appointments have been made under the fellowship and scholarship program. More funds were raised through the MS Hope Chest than in any previous year. While the Society needs \$1 million a year simply to mount a research program in keeping with the magnitude of the MS program, it is gratified that it was able to assign a larger sum than previously-approximately \$300,000-to its medical and scientific program in 1958.

It is also gratifying to the Society that on June 26, 1958 the house of Delegates of the American Medical Association passed a resolution which reiterated its commendation and approval of the principal voluntary health agencies and their method of operation, including fund raising. The medical advisory board had sent the AMA a resolution urging such action and its medical and research director was one of the representatives of voluntary health agencies to appear at the meeting.

The Society adheres to the three main lines it laid down in the early months of its existence, namely: research, education and aid to MS patient and their families.

Funds for these purposes are raised by the MS Hope Chest, conducted by chapters of the Society. Each chapter retains sixty percent of funds for local MS work, including patient services. It forwards the remainder to national headquarters. A major share of the funds under the jurisdiction of the National MS Society are used for its research and fellowship pro-

grams and maintenance of the medical department administering these programs.

Some of the uses to which chapter funds are put are: procuring special devices such as wheel chairs or lifts for patients who need them, furnishing home-care assistance, vocational and other types of counselling, recreational events for patients and support of MS clinics.

Clinics deserve special mention. There are twenty-nine supported wholly or in part by chapters. They are located in hospitals and medical centers throughout the U.S. The Society also maintains a list of other clinics or centers particularly interested in MS—there are nine so listed at present.

An MS clinic serves five principal functions, namely:

- the use of therapeutic approaches in the management of disease symptoms and evaluation of new therapeutic approaches;
- the use of physical and occupational therapy;
- the employment of social and psychiatric services;
- the use of all procedures to establish an accurate diagnosis;
 - · clinical research.

Patients in an MS clinic can be seen by specialists in a number of different medical disciplines, including the psychiatric. This helps in making a differential diagnosis and gives the patient the benefit of early management, under one roof, of a range of symptoms.

The educational and public information programs of the Society are one of its prime concerns—from knowledge comes action. Many means are used to put these programs into effect. National headquarters and chapters share these efforts. Material of medical significance is prepared and issued through the national office. Its publications at present include four manuals for physicians, four for MS patients and several for the general public.

The Society also takes responsibility for producing booklets for the layman, a quarterly publication, MS *Keynotes*, which goes to all Society members and is oriented toward boosting patients' morale, and the major MS Hope Chest materials — posters, TV slides, radio spots, ads and the like.

Newspaper releases and material for other media generally originate from national head-quarters—a highlight is a semi-annual mailing to science writers, which is a comprehensive round-up of recent developments in medicine and research pertinent to MS. Chapters are encouraged to publicize MS events of local interest and many do a splendid job of keeping the public enlightened in this way.

A film made by the National Society with assistance from its Eastern Pennsylvania Chapter has proved to be an excellent and popular

Members of National MS Society chapter get together each month for hobby club activities. Main purpose is therapy but enjoyment is important by-product.



means of telling something of the MS story. This 28-minute, 16mm film, titled "In Sickness and In Health," depicts the diagnosis of MS in a young mother, the problems it created for her and her family and the adjustment they achieved together.

Research, of course, deserves a very considerable part in any summation of the Society's activities.

Since the time MS was recognized as a specific disease, many theories of its cause have been advanced and studied. These include infection from virus, spirochete or bacteria; dietary, including excesses and inadequacies of dietary components, normal and abnormal; vascular disturbances in the brain and spinal cord; allergy; and disturbances of metabolism. None has been productive of sufficiently definitive findings to warrant acceptance as yet. Without question there is a severe metabolic disturbance involved in MS but its cause has not been determined. So the search goes on.

While not neglecting any possible lead, the research program of the Society is chiefly directed at a basic level, the study of cells and molecules, aiming to arrive at a full understanding of the disease process involved.

When a proposal is submitted by an applicant for a Society grant, it is carefully reviewed by the research review panel. The advice of individuals, sometimes as many as five or six scientists, having special knowledge or techniques is also enlisted. The research review panel then makes a recommendation to the executive committee of the medical advisory board, with the entire board being kept informed and given opportunity to comment.

It is not the practice of the panel to pass on projects submitted simply to step up MS research. About half the projects submitted have been accepted to date. As another check on the value of the research being done, recipients of grants are required to furnish progress reports periodically.

The Society is proud of the high caliber of its grantees and gratified that it is now possible to enlist scientists of high excellence in its program—evidence of the greatly increased interest in MS in recent years.

There are at present thirty research projects in progress. Besides those in the United States, there are six being carried on in foreign countries—one each in Argentina, Denmark, Israel, Lebanon, the Philippine Islands and India.

This research covers a wide area and in many cases involves employment of techniques or methods unheard of even a few years ago. Electron microscopy is one example, gas chromatography another.

A great part of the success of the research program is attributable to the medical advisory board. It is composed of outstanding people in the medical field. Its chairman is Augustus S. Rose, M.D., professor of neurology, University of California Medical Center, Los Angeles. He is also president-elect of the American Academy of Neurology.

While governmental agencies, also working to find the cause and cure of MS, certainly play an important role, the voluntary health agency can do many things which the Government cannot do. The National MS Society feels it has made an important contribution to the health field by bringing a feeling of hopefulness where, before, there was hopelessness in the heart of the hundreds of thousands of men and women suffering from MS. Many of them are breadwinners and mothers or fathers of young children - since MS strikes mainly at those in the twenty to forty age group, people at the height of their productive years, whose health is important not only to themselves but to family and community at large.

The MS Society has shown that someone cares, that its efforts on behalf of multiple sclerotics will continue until the day when the cause of MS or means of treating it—or both—are discovered and MS can be made to stand for Mystery Solved. Meanwhile, as a noted medical columnist recently stated, all persons with MS should belong to the Society. He said, "Membership will take away some of the terrible feeling of loneliness that many persons . . . suffer."

MEN WHO MADE THE MEDICINE

S. E. MASSENGILL:

A combination of enterprise and conviction went into the founding of the S. E. Massengill Company of Bristol, Tennessee, to-day a business of international scope. But Sam Massengill had no grand design in mind when he founded the company in 1897. He was motivated by the need to support his family and by a sincere desire to make drugs more readily available to the country practitioners of his region.

Samuel Evans Massengill, founder of the pharmaceutical company which bears his name, was born in 1871 near Piney Flats, Tennessee. Son of a country doctor, he grew up in an area where his pioneer forefathers had helped to make history.

In later life he became an author and historian as well as a successful drug manufacturer, and in recounting the history of his family, wrote that "by the middle of the eighteenth century, the Massengill family pioneered from Virginia into North Carolina and later farther westward. Henry Massengill (Sam's great great-grandfather) in 1769 was the second permanent white settler in what is now Tennessee. Later, in the wilderness west of the Alleghany mountains, he and his neighbors formed the Watauga Association, which adopted the first written constitution for the government of American-born freemen."

Dr. John David Massengill, Sam's father,

was a graduate of the Baltimore College of Physicians and Surgeons, class of 1874, and for 44 years practiced his profession in eastern Tennessee. Young Sam often rode beside him in the buckboard as he traveled the country roads in all kinds of weather to visit his patients. The boy saw for himself that much suffering, and even loss of life, was needless; that the rural physician was severely handicapped by his meager supply of drugs and medicines.

A Farm Family

Dr. John also was a farmer, as he had to make a living (his patients had little or no money and paid him in barter goods). His wife Josephine Evans Massengill, an extremely capable woman, actively managed the farm. In addition to Sam, there were three other children: Norman Hood, his older brother; Fannie and Kate.

FROM A LINE OF PIONEERS



Dr. S. E. Massengill: Nis interest in drug making brought a new industry to Bristol. Old photo (below) shows the plent before it was greatly expended.



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Sam played in the local band, but how well is open to question. As an adult he observed that membership in the band depended more on the ownership of an instrument than on musical accomplishments. He was also a baseball player of ability and is credited with having pitched the first curve ball in that area. Years later he was instrumental in bringing organized baseball to Bristol, Tennessee, and for a long period served as the club's president.

All the Massengill children helped on the family farm. Sam recognized the value of this work and had a great respect for the "good earth," but in later life, when he had a farm of his own, observed: "I like to farm from a Cadillac window."

After attending local schools, Sam was a student at King College, Bristol. He took premedical training at Roanoke College, Salem, Virginia, graduating with high honors in 1890 at the age of 19.

It was necessary for him to work in order to further his education, and his employment during the next few years was varied: county court clerk, general store clerk, railroad time-keeper and commissary clerk, school teacher. In that era of hard and scarce money, Sam's teaching stints paid him between \$15 and \$25 a month.

Drug Salesman

In 1895 Sam Massengill was married to Ina May Jobe, daughter of Tipton Jobe, a large landowner and one of the founders of Johnson City, Tennessee. They had two children, Pauline and John Tipton. (Pauline became the wife of Frank W. DeFriece, president of the company today.)

A year after his marriage, Sam became a representative (called a "drummer" in that day,) for the Arthur J. Connor Company of Boston, Massachusetts, a manufacturer of pharmaceuticals. His territory was east Tennessee, southwest Virginia, eastern Kentucky and western North Carolina. Opening these territories was almost a repetition of the days when he rode with his father.

Roads were rough and usually muddy; some

were mere trails. Many times he had difficulty in finding food and room for the night. But he was warmly welcomed by country practitioners who were far removed from any source of drugs and medicines.

"He always said he learned to swim on a horse," recalls his daughter, Mrs. DeFriece, "as his horse made its way through swollen streams and rivers. His favorite way to travel these mountainous regions was by horse and buggy. In this way he was able to carry more supplies and to take a saddle and plank in case he was stopped by mud, ice or snow.

"When the roads and trails narrowed and became impassable for the buggy, he would go on horseback, with his saddlebags serving as a sample case. Many times the horse had to be tied, or left to graze, while he finished his journey on foot."

Slow Shipments

Another problem facing the young drug salesman was the slowness of shipments from Boston. This was before the day of parcel post; express rates were prohibitive, and there were no organized through freight lines to eastern Tennessee.

There was no alternative but to ship by freight and it was always weeks and sometimes months before delivery was made. And there were competitors whose headquarters or jobbing stocks were closer than Boston. It must be assumed that Massengill called these difficulties to the attention of the Connor Company and suggested that drug stocks be maintained somewhere in his territory. Bristol, then a city of 10,000, was the logical site.

Although the exact date is not known, Norman Massengill, Sam's older brother, also became a salesman for the Connor Company, and thus helped to lay the groundwork for what was to become a new enterprise for eastern Tennessee and the South as well.

An undated issue of *The Bristol News* (the year is believed to be 1900) contains a news account—headlined NEW WHOLESALE HOUSE—which reads as follows:

"Every Bristolian who is interested in the



Norman H. Massengill joined his brother in drug wholesaling venture. Right: Mrs. F. W. DeFriece, Dr. Massengill's daughter, is wife of company's president.



onward and upward growth of the city, will read with delight the announcement that Bristol is to have another wholesale firm. Mr. Arthur J. Connor, a wealthy manufacturing chemist, of Boston and New York, has been in this section recently. He has been the guest of Norman H. and Sam E. Massengill at their country home in Sullivan County. Mr. Connor has made arrangements with these enterprising young business men to open in Bristol a wholesale drug house, under the firm name of Massengill & Brothers. They will carry an extensive stock of all the purest and best goods the market affords, and have large capital to begin on, they propose to build up a large business.

"The Massengill brothers have had long experience in this line, they have been traveling this territory for some time past and are thoroughly acquainted with the trade. They will begin business about the middle of February. "To the new enterprise the News wishes abundant prosperity, and to the young men, who will compose the firm, and to their families, who will become citizens of Bristol, we extend a most cordial welcome."

The new firm, named Massengill Brothers Company, set up shop in a small storeroom for which they paid \$10 monthly rent. Sam put \$600 in cash into the business, and Norman \$500. Sam also brought along two boxes of empty bottles culled from his father's drug stocks.

While Norman shipped orders and ran the office, with the aid of one boy, Sam continued as salesman. Despite an inauspicious beginning, the business began to prosper and grow. With an adequate supply of medicines on hand, better service could now be given to customers. Increased sales resulted.

Meanwhile Sam, as energetic and enterpris-

ing as any of his forebears, had become a physician, too. During the years that he "drummed" for Connors, he also managed to squeeze in his medical courses.

Medical Training

Concerning this aspect of her father's career, Mrs. DeFriece explains that "in those days a medical degree was granted after attendance at medical 'lectures' which usually lasted from three to six months. During interim periods, the student had the opportunity to earn his necessary expenses.

"Dr. Massengill's first training was at Tennessee Medical College, Knoxville, Tennessee. During this first year, he heard about a contest conducted by the College of Physicians and Surgeons in St. Louis, Missouri. Free tuition for one student could be earned by influencing four students to attend the college.

"The enterprising young man soon had four students ready to enroll. This plan enabled him to take his wife and baby to St. Louis. Though Mrs. Massengill had been a 'social butterfly' it was her idea that they rent a furnished flat large enough to room and board the other four young men. Inexperienced as she was, she made a success of this venture, and this group remained devoted friends all their lives.

"She was housekeeper, cook, nurse, seamstress and advisor on all subjects. She 'policed' their study and was very frank to tell them she expected good grades. The fact that all five students made outstanding records was always a source of great pride to her. She was a woman of great courage and will power. Her encouragement, sacrifice and determination contributed to the success of the drug company. Her husband often said, when congratulated on his success, 'My wife would not allow me to fail!'

"The third year Dr. Massengill transferred to the University of Nashville, Nashville, Tennessee, where he graduated in 1899.

"At no time did he intend to practice medicine; he was preparing himself so that he could establish his own business, which would guarantee prompt delivery of needed medicines over a wide area."

New Owners

Sam and Norman became the owners of a pharmaceutical firm when the Connors Company decided to go out of business. The brothers purchased the stock on hand in the Bristol warehouse and all accounts on the books. When these stocks showed signs of depletion, they began to manufacture their own products.

Manufacturing equipment, a larger building, and additional workers were needed. Several salesmen were employed, as it became necessary for the two brothers to give close supervision to the business. After the passage of the 1906 Food & Drug Act, chemists and pharmacists were employed and an analytical laboratory for testing and assaying was established.

The rapid growth of the small company was due, perhaps, to the many friends Sam made as he "drummed" through the country. The firm's motto was "Your order shipped the same day it is received." Physicians appreciated this prompt service.

As the business grew, duties and responsibilities mounted. The founder had many obstacles to overcome; minor and major crises threatened to wreck the struggling young company. It survived three wars, five depressions, strikes, and always the lack of money. Profits were used for improvement and expansion—larger stocks of raw materials, more machinery, larger and more modern buildings, additional salesmen and plant workers to handle the everwidening line of products. By 1917 the future looked much brighter. But then an almost paralyzing blow fell—a fire destroyed buildings, stock and machinery. Insurance was not sufficient to cover the losses.

In Operation Again

The fire occurred at a time when the partnership was in the process of being dissolved. (Norman retired and entered another business.) Dr. Massengill, now sole owner, started operations again on a new site. The firm also had a new name: The S. E. Massengill Company.

The business grew rapidly. Massengill's policies of quality merchandise and prompt service resulted in continued expansion. The plant had to be added to in order to keep pace with the demands of markets.

In time distributing branches were established in Kansas City, Missouri, San Francisco and New York. And markets in Latin America, the Middle East and the Far East were opened.

When asked to what he attributed his unusual success, Dr. Massengill said: "To hard work, sacrifice and personal supervision." He enjoyed work; it was his hobby. He loved detail and always knew what experiments were underway in the laboratories.

He was intensely human, straightforward and honest. He wanted his family to enjoy ease and comfort, but his individual wants were very few. He had no desire to possess things that he could or would not use. After his death his daughter, in going over his material possessions, said, "I am sure no other man who has attained the success of my father has left less that could be held in the hands."

He was a modest person, rather shy and unassuming. He was not a fluent talker but spoke with conviction and knowledge. When referred to as an organizing genius, he would smile and say that he and his business had grown up together and he had always been able to "keep his arms around it."

Anonymous Contributor

He was affectionately referred to as "Dr. Sam," and felt a keen responsibility to his city, community and country. He actively served and generously contributed to religious, civic, educational and cultural activities of his city.

Dr. Massengill usually requested that his contributions be anonymous. He made the services of a Red Cross nurse possible in Bristol for many years. When told by a director that the time had come to announce his gift, the doctor's answer was, "That is all right, go ahead and announce it, but you understand your check will stop."

Dr. Massengill wrote many articles for scientific and medical journals, as well as advertising pamphlets, and published three books—a detailed family history entitled *The Massengills, Massengales and Variants; A Diabetic Guide; A Sketch of Medicine and Pharmacy.* The last mentioned has been used as a reference and textbook in several colleges and medical schools.

Dr. Massengill was a keen student of history. In 1937 he erected a magnificent historical monument as a memorial to his ancestors, and to all the pioneers who were the first settlers of Tennessee. This is located near Johnson City, Tennessee, and is a short distance from the original home of his ancestors. One of his favorite quotations was, "It's pleasant to have roots in the past when you've got an eye on the future." Another belief of his was that people should spend their lives for something that would outlast them.

Dr. Massengill died on December 15, 1946, and his son, John Tipton Massengill, only ten days later. Mrs. Samuel Evans Massengill died August 25, 1949.

The following words, from John Ruskin, were read at Dr. Massengill's funeral:

"When we build, let us think that we are building forever. Let it not be for present delight, nor for present use alone—let it be such as our descendants will thank us for. And let us think, as we lay stone upon stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say, as they look upon the labour and wrought substance of them, 'See! This our Fathers did for us.'"



MEDICO

MEDICO is an organization of American doctors, sponsored by the International Rescue Committee, and dedicated to relief of suffering all over the world. In addition to this Christian motive, MEDICO has a bit of the rattlesnake and a dash of sulfur and brimstone in its makeup. Let's talk about this phase first.

Before doing so, listen to a few of the names on the MEDICO board: Doctor Albert Schweitzer; Doctor Gordon Seagraves. (the Burma Surgeon); Doctor Alton Ochsner; Doctor Gunnar Gundersen; Doctor Paul Dudley White; Doctor Sarah Jordan; Doctor Henry Bockus; Doctor Howard Rusk, Doctor Alfred Blalock etc., etc. The list goes on and on.

Now to the rattlesnake business. It turns out that doctors are extremely powerful weapons in the cold war. MEDICO has worked out a way to send doctor teams into contested areas. Our enemies (their words, not mine) send propagandists in by the thousands. One of the things they do is to tell all the natives what utter dogs all Americans are.

Then a MEDICO team, consisting of a doctor or two and necessary helpers, goes in. They don't propagandize at all. They just get to work helping people. And the MEDICO teams don't give away anything. A charge is made for service. The charge may be two chickens for an operation or a handful of yams for curing a case of pneumonia, but the charge is there. MEDICO does not propose to gain the

enmity of the natives by giving anything free.

The plan is so elegantly simple that it is certain to work. If a native is hurt and an American doctor helps him, no amount of adverse propaganda can convince that native that Americans are a bad people. In some trial areas, one MEDICO team has been just as effective as hundreds of agents.

Medico came into being because of two policies of our government—with which it has no connection at all.

- 1. Our government has no "propaganda ministry" for the purpose of attacking the thought pattern of native peoples. We want none, for the functions of our government do not include forcing our opinions on others. Even so, it is necessary that we defend ourselves in critical areas. This is a function of non-government agencies. The doctors of MEDICO agree.
- 2. Our government has no people-to-people aid program worthy of note. There just isn't enough money and personnel to carry out the massive projects now in operation and to initiate a big people-to-people program as well. MEDICO hopes to help close this breach.

Conditions in some critical areas of the world are unbelievably bad. Let me tell you about two places.

In one group of islands which may someday be strategically important, there are 75,000 natives. There has never been a doctor closer than several hundred miles over tricky open sea. Only a scant fifteen percent of the babies born live anything like a normal span. Malaria is universal and there never have been any antimalarial drugs.

On one island there are herded together four hundred lepers. They have no medicines and no care of any kind. They literally rot to bits and die in agony with no help.

And this place is Miami Beach compared to some areas.

There is one country—teetering on the brink of going Communist—that has only two doctors. This country is as big as the state of Alabama and has almost as many people. Incidentally, one of the doctors is a MEDICO man. The other is a Frenchman who serves as Minister of Health. He does not practice.

While MEDICO is a powerful weapon to further the interests of peace, its primary purpose is to help alleviate suffering.

Now, let's get down to bedrock. MEDICO is a powerful force for us. We have reached the state of encirclement where we had better take decisive action quickly. The medical profession should support this move wholeheartedly. There are three things to do:

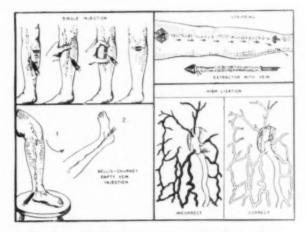
- 1. Tell everybody you can about MEDICO and enlist their support if possible,
- Doctors and medical personnel who can go on one of the teams should volunteer.
- 3. Those of us who cannot go should support the program with cold cash. Any one of us should be willing to contribute a couple of housecalls a month to Medico. Don't you agree?

If you want more information, please drop me a line at the address below. I will see that you get it! Contributions may be sent to the New York office: MEDICO, International Rescue Committee, 241 4th Avenue, New York 10, New York.

Contributed by:

PAUL WILLIAMSON, M.D. Box 788 Dickinson, Texas

CLINI-CLIPPING



Ligation and injection treatment of varicose veins.

GUIDE for our readers

The conventions of the presentation of advertising material on pharmaceuticals are related to certain ethical and practical considerations. This guide should be of help to all our readers in an understanding of the advertising material contained herein. Unless it is stated to the contrary:

> All illustrations of physicians and patients are dramatizations utilizing models and not specific physicians or actual patients. The ethical and other considerations for this are obvious.

> Illustrative material such as dummy prescription blanks, hospital charts, calling cards, memos, etc., are presented as dramatizations.

> Composite case histories, drawings and/or photomicrographs are often presented to convey typical clinical indications but unless stated to the contrary are constructed as illustrative cases or situations.

Physical limitations of space in journal advertising make the presentation of all relevant data impractical; therefore, it is suggested that for suitable background on dosage indications and contraindications the standard package insert or more extensive background data be consulted.

The acceptance of material for advertising is based upon several criteria; for example, in respect to safety, all new drugs are required to correspond with the accepted Food and Drug application.

It is suggested that any difference of opinion of individual physicians with any advertisements be called to the attention of the editor, with a duplicate copy of the letter to the pharmaceutical house whose advertisement is the subject of the letter.

THE PUBLISHERS



FOR THE SUCCESSFUL PHYSICIAN

Prepared especially for Medical Times by C. Norman Stabler, market analyst of the New York Herald Tribune.

PITY THE PROGNOSTICATOR

"These are the times that try men's souls," uttered Thomas Paine, with respect to "The American Crisis," in 1776.

His familiar statement has been repeated thousands of times since, by generals, statesmen, physicians, explorers, and members of myriad other callings who face the necessity of making a decision, knowing within themselves there can be but one of two possible answers. Either, "you were right," or "you were wrong."

The economist and the prognosticator of business trends, and its kindred subject—the course of values in various markets—is no less a victim of the circumstances of his calling. An avid public, with the speculative bit in its teeth, wants answers, and it wants them without those hedge clauses with which we are all familiar.

That makes it difficult for the soothsayer, from whom we demand all. The majority of those in this hazardous profession is of the opinion we are heading into a prolonged period of prosperity. That has encouraged others, in the allied field of the stock market, to forecast a rising price trend. A few have mentioned figures between 700 and 1,000 for the popular Dow Jones industrial index.

The prognosticators are not of one and the same opinion. They are in a competitive game

with each other and words that are passed back and forth at times have the ring of a conversation between rival managers at the big baseball game.

You may have seen in the press the recent comments of one member of this fraternity in which he chided his "brothers in the bond" for their dependence on tea leaves, figuratively speaking. He was Woodlief Thomas, economic advisor to the Board of Governors of the Federal Reserve System. Said Mr. Thomas:

"It is customary for forecasters, after describing current trends in some detail, which already are familiar to any knowledgeable person, to predict that these trends will continue for the next six months, but that after that there will be a levelling off, or that the situation is too uncertain to permit of a longer forecast."

He was saying in effect that the quality of forecasts on the economy, and the stock market too for that matter, is of questionable value. The science of economics has not yet progressed to the point where one can chart future manifestations of mass psychology. He who attempts to do so finds he lacks the scientific tools that are available to other professions.

Yet there are many who make the attempt, seeming to welcome these times that try men's



Like oil on troubled waters

TABLETS . CAPSULES . ELIXIR . EXTENTABS®

In each Tablet. Capsule or tsp. (5 cc.) of Elixir Hyoscyamine sulfate 0.1037 mg

Atropine sulfate 0.0194 mg.

Hyoscine hydrobromide 0.0065 mg.

Phenobarbital (1/4 gr.) 16.2 mg.

In each Extentab

0.3111 mg.

0.0582 mg.

0.0195 mg.

(3/4 gr.) 48.6 mg.

Prescribed by more physicians than any other antispasmodic



DONNATAL



NATURAL BELLADONNA ALKALOIDS PLUS PHENOBARBITAL

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA • Ethical Pharmaceuticals of Merit since 1878



souls. Perhaps a few of them rely on the mathematical axiom that the odds are even, that they have at least an even chance of being able to say, "I was right," as they have of being forced to say, "I was wrong."

Others in the fraternity are fashioned from a different mold. They are men of firm convictions, and, because they are so convinced, they are usually good orators and good salesmen, for they have even "sold" themselves on their own omniscience. This is a difficult type, for few indeed in this group possess the fortitude to admit previous errors even when faced with them.

We would rather trust a third group in the fraternity. Fortunately it is fairly numerous and its members are fully aware of the short-comings of their profession. They grant the probability of error and admit they have no expectation of being able to pick the market's high or its low.

The tools with which they work are the

records of the past. These are available and, with respect to the stock market, one can determine with a high degree of accuracy whether a particular company is going ahead or is falling behind its comptitors. No one can foretell the recurring waves of depression and enthusiasm that seize upon the public from time to time.

Most of us remember when stocks of companies that were financially sound, and gave every promise of being the corporate giants of the future, went begging at one to five times their then low per share earnings. Now many of them are appraised by an enthusiastic public at forty to sixty times high per share earnings. The prognosticator can indeed observe that these are trying times in his profession.

Give him a share of your pity and do not expect him to pick the highs for your stocks. The majority in his calling look for a high degree of business activity in the immediate future, and we should not blame those who limit their predictions to the next six months, with hits that after that there may be a leveling off.

After all, if a man could foretell the next twenty-four hours in the stock market, in wage negotiations. in the prices of various food items, in the balloting to be taken in legislative hall, or in other things of business and economic interest, he would be more famous than was Joseph of biblical days who accurately foretold seven years of plenty and then seven years of famine.

PLENTY OF SMOKE

Remember the cancer scares? For a while the possible connection between cigarette smoking and cancer caused a reduction in the sales of cigarettes, although filter brands moved ahead.

On an overall basis, however, there was a 6.6 per cent increase in cigarette consumption last year. The "Value Line Investment Survey" says that thus far this year, consumption has continued to grow at a better than average rate. It estimates this year's domestic cigarette

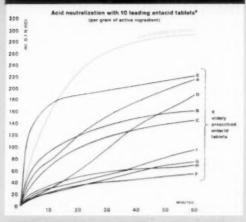
consumption at 445 billion units, 4.3 per cent ahead of 1958's 436.3 billion tax paid units.

The current year, it observes, may witness a return to a normal rate of sales and profits growth in the cigarette industry. Even though competitive pressures remain intense; raw material costs are rising, and higher excise taxes are tending to discourage further price increases, a stable, moderately expanding market should assure favorable over-all results for the cigarette industry.

THE MOST SIGNIFICANT IMPROVEMENT IN ANTACID THERAPY SINCE THE INTRODUCTION **OF ALUMINUM HYDROXIDE IN 1929**

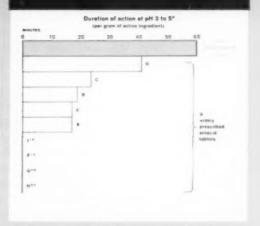
reamal

CREAMALIN neutralizes more acid faster Quicker Relief . Greater Relief



Tablets were powdered and suspended in distilled water in a constant temperature container (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric acid was added as needed to maintain pH at 3.5. Volume of acid required was recorded at frequent intervals for one hour.

Creamalin neutralizes more acid longer More Lasting Relief



*Hinkel, E. T., dr., Fisher, M. P. and Tainter, M. L.: A new highly reactive atominum hydroxide complex for gastric hyperacidity. To be published.

**ph stayed below 3.

Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

- 1. Neutralizes acid faster (quicker relief)
- 2. Neutralizes more acid (greater relief)
- 3. Neutralizes acid longer (more lasting relief)
- 4. No constipation . No acid rebound
- 5. More pleasant to take



No chalky taste. New CREAMALIN tablets are not chalky, gritty, rough or dry. They are highly palatable, soft, smooth, easy to chew, mint flavored.

Adult Dosage: Gastric hyperacidity-2 to 4 tablets as necessary. Peptic ulcer or gastritis -2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed with water or milk, or allowed to dissolve in the mouth.

Supplied: Bottles of 50, 100, 200 and 1000.

Minthrop LABORATORIES - NEW YORK 18, NEW YORK

A WALLSTREET "GLOSSARY" OF TERMS

Wall Street men and women are not always serious minded. They may appear to be that way when talking with a client, but they are just as addicted to kidding themselves as are the members of other professions.

The Security Traders Association of New York, for instance, in its year book of some time past, published a so-called glossary of financial terms. You may not recognize any of them, but here they are:

BOOKKEEPER—The man who keeps the books. Usually stoop-shouldered, wan from lack of sun; great coffee drinker. Handles all pools—collects for marriages, babies, Bar Mitzvahs, partner makings, etc. Everyone trusts him. There are various kinds and types of book-keeping—some kinds are slightly illegal—so we won't mention them.



CONTACT MAN—The Grover Whalen, the friendly collie type, of pleasant appearance, well groomed and of good constitution, for obvious reasons. The Ambassador of

Good Will. The word contact means to meet or to bring in. That's exactly what this fellow's job is. Employed to assist the Trading and Order Department to bring in business by meeting and selling the originator of such business. He is continuously at war with his shop in order to alibi his own shortcomings. Takes his family to dinner at "Chock Full of Nuts" but entertains the customers regally at "El Morocco." Knows everybody, talks authoritatively on any and every subject and usually gets most of his information from one of the runners.

ECONOMIST—Same as an analyst, except that he is supposed to view the "broad" aspect, but is usually much too old.

FLOOR BROKER—An order clerk with a carnation in his office coat. Spends his time with his contemporaries on the floor and associates only with the upper crust. Will usually come up to the office when all is running well but let

something go wrong and try and find him. Never wrong—it's either—"I matched and won—or—you matched and lost."



MARGIN CLERK—Antithesis of the Smiling Irishman—Understudy to Boris Karloff. As popular as a hair in a whiskey sour. More recently on inactive list—but slowly regaining previous status.

JUNIOR PARTNER—The boy with ambition. If no ambition—"Smart boy—rich father" Can beat anyone at golf (senior partner excepted.) Takes a short evening course at N.Y.U. downtown and trying for his master's at the Stork Club uptown.

CASHIER—The one who has charge of money, (mostly petty cash and try to get an advance). He is usually charged with the practical management of the business. He does personnel work, no hiring but firing. Interviews, and takes care of all the girls until the partners see them. Is a large holder of securities. (of record—but not beneficially).

Customer's Broker—A rose by any other name. Account Executive, Registered Representative—once was called a Customer's Man until the ladies moved in. The contact with the public. Advises, recommends, makes switches and must have a high success average or—blame it on someone else. Rugged individualist but a great beefer.



SENIOR PARTNER—The Greatest—exponent of—the harassed look and studied disarray in attire. How he suffers with income tax — transfer tax — trader's positions — personnel — under-

writing flops! Nothing good ever happens to him. But—he still can't get out of the 90 per cent bracket and always winds up with a loaf of bread under each arm.

ORDER CLERK-The Artful Dodger-Thinks

antiallergic

NOSE-OPENER

controls allergic factors eliminates itching and sneezing with antihistaminic Thonzylamine HCI

spreads almost instantly

penetrates mucous barrier



clears air passages

decongests without rebound congestion

safe — no pediatric dosage form is needed

combats infections

Thonzonium bromide 0.05% Neomycin sulfate 0.1% Gramicidin 0.005% Thonzylamine HCl 1.0% Phenylephrine HCl 0.25%

15 ml. atomizer and dropper bottle.

Also, Biomydrin * F nasal spray with hydrocortisone alcohol 0.02% – useful in the most stubborn cases of edema and inflammation. 15 ml. atomizer.





MORRIS PLAINS, N.J.

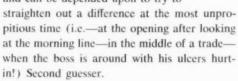
BIOMYDRIN

nasal spray/drops

he can glibly explain away anything. The athletic type who lives for the summer office picnic. Always arranging the soft ball game. Usually has to lay off for a week afterward with bruises, contusions or broken bones.

PRIVATE SECRETARY TO THE BOSS—Has two 25 year pins. Left high school to work for small firm—and now look! Beatrice Fairfax to all the younger girls. "J. Edgar" for the boss. Lunches at Schrafft's daily with other girl (?) executives. Has a mink coat (self-boughten).

PURCHASE AND SALES TABULATOR
—In charge of figurations and the
preparation of confirmations. Usually also handles the comparisons
and can be depended upon to try to
straighten out a difference at the most u



PUT AND CALL BROKER—A bookie with good connections.

RECEPTIONIST—The first figure that catches the customer's eye. Knows the size of each account.

SALESMAN—A specialist in his line. Provides expert advice for his customers and the general public. He works in cycles and is especially effective near pay day. Always has a legitimate excuse for getting an advance. Can break your heart with stories and tales of woe, which he rehearses on the trader before tackling the boss. His mother thinks he still plays the piano.

RUNNER—Runs only when going home or out for a quart. Senior partner's confidant. Usually retired civil servant or tight rope walker. Can regale with stories of heroism and fearlessness. The truth is he held a desk job.

STATISTICIAN—Same as an analyst or economist and would prefer to be labeled as such. He is usually employed by a smaller house, has title in lieu of salary. His department colloquially referred to as the Brain Factory. Former office

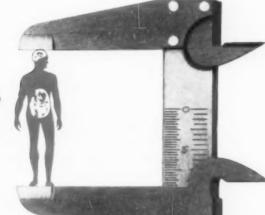
GUIDE FOR INVESTORS

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

- 1. Think before buying, guard against all high pressure sales.
- 2. Beware of promises of quick spectacular price rises.
- 3. Be sure you understand the risk of loss as well as prospect of gain.
- 4. Get the facts—do not buy on tips or rumors.
- Give at least as much thought when purchasing securities as you would when acquiring any valuable property.
- 6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.
- 7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

NEW G.I. DOSAGE FORM

FOR DOSAGE ADJUSTABLE TO THE MEASURE OF THE MAN



Milpath-20

200 mg. Miltown® + 25 mg. anticholinergic

1/2 strength Miltown (200 mg.) with full-level anticholinergic (25 mg.)

... When the G. I. patient requires increased anticholinergic effect with normal levels of tranquilization, prescribe 2 Milpath 200 t.i.d., or as needed.

... When the G. I. patient requires long-term management with established anticholinergic levels but with lower levels of tranquilization, prescribe 1 Milpath 200 t.i.d., or as needed.

Two dosage forms of Milpath are now available

MILPATH 200-Each vellow, coated tablet contains 200 mg. meprobamate and 25 mg. tridihexethyl chloride.

DOSAGE: 1 or 2 tablets t.i.d. at mealtime and 2 tablets at bedtime.

MILPATH 400-Each yellow, scored tablet contains 400 mg. meprobamate and 25 mg. tridihexethyl chloride.

DOSAGE: I tablet t.i.d. at mealtime and 2 tablets at bedtime.

Both forms supplied in bottles of 50 tablets.



WALLACE LABORATORIES New Brunswick, N. J.

boy of one of the leading statistical services whose job was usurped by a mechanical brain.

Specialist—A Floor Broker with an orchid in the carnation in his office coat. A parimutuel without the handle.

TELEPHONE OPERATOR—Not enough superlatives to describe her every quality. The pulse of the organization. In the same category as the office receptionist. Knows the score at all times. Usually has evening gown and willing to travel.

TELETYPE OPERATOR — OUTA OFC WEN TWX RGS—which translated means — When the teletype rings she is out of the office. Most likely with telephone operator repeating story which traders didn't think she could hear. Official shopper for the department, keeps

traders' wives birthdays and anniversaries—gets the black coffee — button sewer — Florence Nightingale of every office. One, the other day, made matter over mind misprint and typed—"Please keep us in mink."

TRADER — One who regularly takes commitments (sometimes they act like they take something else) for, or executes orders, in behalf of his firm with other dealers. They come in many categories and characters. They — get annoyed when that salesman asks for too many quotes, get abused when the newspaper quote is out of line, never get a call back from the guy who "took it in hand." Build a bad judgment into a regular Cloak and Dagger thriller—they set me up—they knocked me off. Complain about their competitors when really they are the best of friends. Will keep you closely posted—then forget or go to lunch.



HOW THE APPRAISER WORKS

In the appraisal of the value behind any security it is obvious many things must be considered. We are not talking about the quotation of a stock on the ticket. That can run up, if there is a sudden demand and a small available supply, and it can go down just as fast on a bit of selling if prospective buyers get their hands caught in their pockets.

Actual value, or reasonable value we might say, is another matter. A stock could conceivably advance when the motive power is nothing more than propaganda planted by a well organized bunch of promoters, doubtless holding options at much lower prices. One might whisper that "Cow Pasture Uranium, Inc. has a value of X dollars, because that is its ticker price. If you want to sell it at that price, go ahead. Therefore, that's the value."

We use the word in quite a different sense. Irrespective of the quotation that may be placed on a stock because of the public's appetite at any particular moment, what are the fundamentals that properly should lead one to buy it or sell it?

The student of markets has many things to consider. His decision may come up with an answer that the marketplace, at the moment, says is wrong. He might conclude that such and such a stock is worth only \$20 a share, whereupon his client will point out it has just jumped from \$30 to a present price of \$40. The answer is that it is the last man on the chain letter who pays the bills. Early ones, who promoted it in the first place, are the collectors.

Even arriving at his figure of \$20, the analyst has a difficult job, and must deal with a number of imponderables, on which all he can do is use his best judgment.

The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information nor any opinion expressed constitutes either a recommendation or a solicitation by the publisher or the authors for the purchase or sale of any securities or commodities.



NOW... AROUND-THE-CLOCK CONTROL OF APPETITE NEW PRELUDIN[®] A PROLONGED-ACTION

DOSAGE FORM

Clinical experience has long established PRELUDIN as an antiobesity agent distinguished by its efficacy and its relative freedom from undesirable side actions. Now, convenience is added to reliability in ENDURETS... a specially devised long-acting pharmaceutical form. Just one PRELUDIN ENDURET (75 mg.) tablet after breakfast curbs appetite throughout the day, in the vast majority of cases.

PRELUDIN* (brand of phenmetrazine hydrochloride) ENDURETS" Each ENDURET prolonged action tablet contains 75 mg. of active principle. PRELUDIN* is also available as scored, square, pink tablets of 25 mg. for 2 to 3 times daily administration. Under license from C. H. Boehringer Sohn, Ingelheim.

ENDURETS is a Geigy trademark.

GEIGY 218 219 310 311 3

Ardsley, New York

He will probably start with the stock's book value. This is the actual money value of all of a corporation's assets, such as plant, equipment, inventories, accounts receivable, and cash, etc., minus its liabilities. The difference is then divided by the number of equity shares outstanding to arrive at the book value per share. There is no necessary correlation between a stock's book value and its market price, as many factors enter into determining the level at which one will buy and another will sell.

Book value can be misleading in even another way, even though it is an important figure. To illustrate this, by taking two extreme cases, let us suppose a company built a railroad across the Sahara Desert, which cost a million dollars a mile. For 100 miles it paid \$100,000,000. This was contributed by its original investors putting up \$100 a million shares. The book value thus works out to be \$100 a share—for it is the sum paid in, and there is the railroad, worth \$100,000,000, according to the books.

But that is not its value, because there is virtually no traffic in freight or passengers.

Now the contrast. Another company, for the same amount of money, gets a franchise in a populous area and constructs its railroad. Its book value also is \$100 a share. But its earnings mushroom, thanks to heavy traffic, and buyers are plentiful who will pay several times book value to own a piece of the bonanza. Admittedly this explanation is simplified. Book value is a more important item than this illustration indicates, for book value, roughly speaking, represents the amount of investment that has been made in the physical property of the corporation.

He who attempts to appraise the value of a stock, as differentiated from he who merely looks at the ticker, will consider book value. But he mustn't stop there. Let's list other things the analyst must weigh if he is to give a fair appraisal of a stock's value.

A concern that is in this business, the American Appraisal Co. of Milwaukee, includes other items such as: the company's earnings and the trend of these earnings, the growth of its business as reflected by gross sales, the trend of its profit margins, its dividend policy, the overall capital structure, the extent, utility and condition of its plant facilities, the character of its management and executive compensaiton, the nature and history of the business, the economic outlook for the business and the industry, comparative studies of the price of a company's stock and that of others in the same industry, research expenditures and the company's control of patents, trade marks and other intangible assets.

When you ask a man in the investment business whether you should buy or sell a certain stock, the above are among the things he should know to give you the perfect answer. Even then he might be wrong, for no allowance is made for what the courts call Acts of God.

BUILDING OUTLOOK BRIGHT

Home construction promises to be one of the industries that will do its share to keep the economy rolling over the next few years. Murray Shields, well known economist and a partner of MacKay-Shields, Inc., economic consultants, New York, told a recent Management Conference of the United States Savings and Loan League, meeting at Boca Raton, Florida, that the number of housing starts most likely will reach the two million unit-a-year level by the end of 1960.

Expanding demand for new housing will "before many years," make the residential construction industry "a \$100 billion business," and in the decade of the 1960's, the industry will "rank near the top of the growth industries," he said.

Shields told the Conference, that in his opin-

I THOUGHT IT WAS **CURTAINS**

I was putting up my new curtains and draperies last week when ...



The step-stool wobbled . . . I fell and landed right on my back.



FOR

so painful - I called my doctor. He gave me a prescription for some tablets and told me to take one right away.



Would you believe it? That tablet worked in 15 minutes! The pain really went away fast - and I got those curtains up without further trouble.

AND THE PAIN WENT AWAY FAST

& Percodan Tablets



Endo LABORATORIES
Richmond Hill 18, New York

ACTS FASTER - usually within 5-15 minutes. LASTS LONGER - usually 6 hours or more. MORE THOROUGH RELIEF - permits uninterrupted sleep through the night. RARELY CONSTIPATES - excellent for chronic or bedridden patients. VERSATILE - new "demi" strength permits dosage flexibility to meet each patient's specific needs. PERCODAN-DEMI provides the PERCODAN formula with one-half the amount of salts of dihydrohydroxycodeinone and homatropine.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit-forming. Federal law permits oral prescription.

Each Percoban* Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. phenacetin, and 32 mg. caffeine.

ion, the nation has been "underbuilding in the housing area" for the past few years. After a vigorous rise in the early postwar years housing starts leveled out in 1950, with this year's starts—estimated 1,250,000 units—to remain below the level of both 1950 or 1955.

"Meanwhile, population has increased substantially and marriages, after reaching a post-war low in 1958, will be skyrocketing by the late 1960's. As long ago as 1925, housing starts were 940,000 units, and since that year, the population has increased by 60 million, or 52 per cent, and the number of families has increased by 23 million, or 80 per cent."

He based his prediction on these beliefs:

- 1) A substantial increase in housing starts is necessary to take care of depreciation and obsolescence. At least 35 per cent of the present housing inventory is over 40 years old and nearly 50 per cent is over 30 years old.
- Family relocation will continue to be a major stimulant to housing, with all signs indicating a continuance of the current pattern which sees one out of five families—over 20 per cent—relocating each year.
 - 3) Because housing is "politically sensitive,"

it will be the number one area for governmental "counter-cyclical spending and credit stimulation," receiving federal aid in both good times and bad.

- 4) An additional supply of "tens of billions" in home mortgage funds will be available from the nation's savings and loan associations, and other lending institutions, as they continue their exceedingly-rapid growth.
- 5) Single-family home and apartment constructions will speed up as new materials and methods now being developed as part of the "technological revolution" become commonplace in the housing industry.
- 6) A rise in average family income from the \$6,200 of today to \$9,100 in today's dollars by the end of the 1960's will provide the funds for families to upgrade their housing standards.
- 7) The housing industry stands to gain from the fact that the home is becoming an everimportant "status symbol." Now that recreation has become a major element in our way of life, "two-home" families may become as commonplace by 1970 as "two-auto" families are today.



The boating industry is benefiting from the crowded highways. The estimate is that 35,-000,000 Americans this summer will spend about two billion dollars on pleasure boating.

National Securities & Research Corporation, in an issue of "Atomic Activities," published by the investment company, notes that the boom is similar to that which occurred in automobiles in the 1920's. The lure of the highways, coupled with technological developments that made cars safer and easier to drive, popularized motoring years ago, and for many of the same reasons the waterways are sought today.

Radio direction finders and radars now assist small boat skippers in navigating. Compact radio telephones provide convenient communications as well as the means of sending distress signals in time of emergency. Ultrasonic depth gauges furnish warnings of dangerous shoal waters.

"From a business standpoint, these electronic devices for pleasure boats represent a market sufficient to attract some of the America's largest companies," it notes.

Another area of advanced technology that is benefiting boating is plastics. Glass fibre reinforced plastic boat hulls have won wide-spread acceptance for both large and small private craft. Qualities such as long life, low maintenance and an inherent degree of fire resistance combined with reasonable cost are distinct advantages for small boat owners. Boating applications have played an important role in doubling glass fibre production in less than five years to an annual sales volume in excess of \$250 million. Other forms of plastics are used in paints, life jackets and rope.

the next two patients
that you see
with biliary dysfunction
can demonstrate to you
the effectiveness of
NEOCHOLAN
in relieving

flatulence and belching intestinal atony indigestion chronic constipation

Neocholan® greatly increases the flow of thin, nonviscid bile and corrects biliary stasis by flushing the biliary system. It also acts as a smooth muscle relaxant, resulting in an unimpeded flow of bile and pancreatic juices into the small intestine. Each Neocholan tablet contains:	P. O. Box 1656, Indianapolis 6, Indiana Please send me, without charge, two clinical packages of Neocholan.
Dehydrocholic Acid Compound. 250 mg. Homatropine methylbromide 1.2 mg. Phenobarbital 8.0 mg.	ADDRESS
Bottles of 100 tablets.	STATI

For sailing craft, synthetic fibres such as dacron and nylon offer advantages of lightness, strength, quick drying, freedom from mildew and much longer service life than the traditional cotton sailcloth.

Advanced metallurgy is also making its mark on boating according to National. Corrosion resistant stainless steel and titanium are ideal for deck fittings, aluminum spars and masts are now commonplace in many sailing craft, and outboard motor manufacturers extensively use aluminum alloys because of ease of fabrication by die casting combined with weight advantages.

NOT ALL STOCKS GO UP

When electronic, drug, many chemical and miscellaneous stocks were scoring new highs two months ago, it was assumed by many who were reading about the stock market instead of participating in it, that everything was "going through the roof."

The Wellington Co., national distributors of

Wellington Fund, on the basis of figures obtained from the New York Stock Exchange, prepared a chart (shown on opposite page) which shows that more than one-third of the issues listed on the Bib Board declined in the period from 1946 high (May 29) to the close of last year.

HEALTH INSURANCE COVERAGE

The Health Insurance Institute estimates the 121,000,000 Americans are covered by some form of health insurance. The extent of the coverage varies widely however.

It took a survey of what it termed representative families and came up with a number of observations. One was that in families where the income is \$5,000 a year or more, 80 per cent of the persons had some form of coverage. Between an annual income of \$3,000 and \$5,000, it estimated 74 per cent were covered.

The study said that most of the families

that did not have coverage explained it was because they couldn't afford it, but that 60 per cent of these uninsureds conceded they did not know what the cost would be.

The report indicated that the greater the medical expenses, the smaller the proportionate benefit payments. Thus, while 38 per cent of the families were reimbursed for most or all of their medical expenses when the amount was \$500 or more, there were 50 pr cent who recovered costs that ranged from \$100 to \$500, and 65 per cent collected when the amount was below \$100.

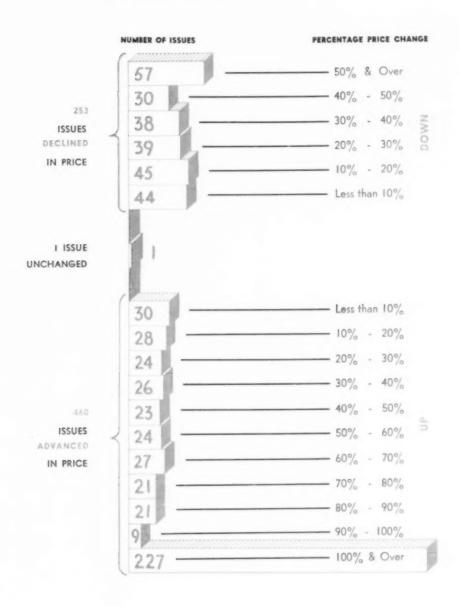
POSSIBLE BOOM IN CORN PLASTERS

Companies that make mail-inserting machines, postage meters and various other equipment, to facilitate posting an extra number of letters, are adding to the corns and aching backs of postmen. From such figures as we could obtain, the mail from business firms alone amounted in 1958 to 22 billion pieces, or about 60 million a day. If we include non-business mail, the figure comes to 60 billion pieces a year, or about 348 for every man, woman and child in the country.

A contributing factor to the increase is the trend toward automation, which in turn follows the effort of industry to reduce its costs on the mailing front.

Frank Whiting, vice president in charge of sales of Bell & Howell Phillipsburg, a subsidiary of Bell & Howell, Chicago, says American business uses 3,000 mail-inserting machines alone, compared with 1,000 in 1951. "At the rate business is going, there'll be at least 6,000 operating within five years," he

STOCK MARKET PROFILE



said, adding that mail-inserting machines last year processed some seven billion pieces of business mail, or approximately one-third the commercial total.

"The machine-inserted mail volume will

swell to eight billion pieces this year," he predicted.

Whiting explained that increases in postal rates and rising clerical labor costs—plus a swell to eight billion pieces this year," he said.

YOUR BEST FRIENDS CAN'T TELL

Beckman Instruments shares had a big runup in the stock market recently, as you may have noticed. It is an aggressive company.

We won't swear to it, but possibly a contributing factor was a report it has developed a new electronics instrument that can sniff out flavors and aromas from chemical mixtures.

Our informant went so far as to suggest it may even be possible to remove "hangover ingredients" from alcoholic drinks, thus making one relatively immune from what Madison Avenue calls the odor of "tell-tale beverages."

THE TOILETRY OUTLOOK

The bright economic outlook is not confined to the heavy industries, such as construction. Similar optimism is expressed regarding a number of the consumer lines.

The toiletry industry is a case in point and the firm of David L. Babson & Company, Boston, notes as reasons for being optimistic about its future such points as a recent survey in New York that girls begin to use cosmetics at the age of fourteen whereas formerly they didn't start until they were sixteen.

There are other more basic forces working for the toiletry makers, the firm observes. It is benefitting from the increase in population, the huge expansion in optional spending power, the added amount of leisure time, the growing emphasis on personal care and the generally higher scale of living. The sixteen-to-forty age group accounts for the bulk of toiletry and cosmetic buying and this age span, which numbered less than 60,000,000 in 1950 is expected to exceed 75,000,000 by 1970. Moreover, adds the firm, the post-war army of youngsters is now crossing the thirteen-fourteen year line and its number should increase by 40 per cent by 1961.

The firm takes issue with investors who believe the industry to be vulnerable to periods of declining activity. On the contrary, it shows in the right hand column below, that in years of recession the business has steadily forged ahead.

A COMPARISON OF INDUSTRIES

	AVERAGE ANNUAL RATE OF INCREASE 1948-58 1953-58		CHANGES IN SALES IN YEARS OF RECESSION 1948-49 1953-54 1957-58			
GROSS NATIONAL PRODUCT	5%	4%	NC*	- 1%	- 1%	
TOILETRIES AND COSMETICS	7	7	+ 3%	+ 5	+ 5	
TOBACCO	4	4	+ 4	- 3	+ 5	
FOOD & BEVERAGES	3	3	_ 5	+ 2	+ 1	
SOFT DRINKS	5	7	1	+ 1	+ 6	
LIFE INSURANCE	11	11	+ 4	+25	_ 2	
ETHICAL DRUGS	13	18	+ 6	+18	+31	
NC*-no change.						

athlete's foot



Athlete's Foot – one of the most prevalent and troublesome fungus infections today – is estimated to affect 90% of the population at one time or another. Desenex, containing the unsaturated fatty acid, undecylenic acid, has proved to be one of the most potent antimycotic agents known for effective treatment of superficial fungus infections.

Night and Day Treatment

At Night — Desenex Ointment (zincundecate)
— 1 oz. tubes. During the Day — Desenex
Powder (zincundecate) — 1½ oz. container.

Also — Desenex Solution (undecylenic acid)—

2 fl. oz. bottles. In Otomycosis — Desenex
Solution or Ointment.



Write for samples

MALTBIE LABORATORIES DIVISION
Wallace & Tiernan Inc. • Belleville 9, N. J.



fast relief from itching prompt antimycotic action continuing prophylaxis

PD-92

DIVERGENT TREND IN EARNINGS

The second quarter is nearing its close and generally speaking it has been a satisfactory one from the standpoint of corporate earnings. Presumably when the figures are made public, however, they will demonstrate again that not all companies have moved ahead together, any more than all stocks join uniformly in a move in the stock market.

The divergent trend was quite noticeable in

the first quarter, as the economy continued its progress out of the mild 1958 recession.

The firm of Francis I. duPont & Co. has selected a few of the leading companies to show how some were fortunate and others not so fortunate. The table on page 125a gives the 1957 and 1958 per share earnings of those it selected, and their results in the first quarter of 1958 and 1959.



You may not wish to go to the moon in a rocket, but the day may come when you will have in your kitchen something that closely resembles a miniature jet age rocket, with which you will cook the meat for dinner.

So we judge from E. I. du Pont de Nemours & Co., which says a gadget of this nature will do the cooking in half the time. It stems from

an unusual use of the company's "Freon-12" refrigerant. You use it by sticking thermo pins, which contain the Freon chemical, into the meat, whereupon the pins, in effect, pipe the heat deep into the roast.

The meat is cooked from the inside out and the process reduces evaporation of natural juices and eliminates the need for basting.

MAINTENANCE EXPENDITURES UP

Building materials companies, in addition to supplying the needs of the new home builder, also benefit from outlays for maintenance, modernization and additions to existing homes. The amount of such outlays is not included in estimates of new construction totals.

Standard & Poor's believes they have been moving ahead at a rate of about 10 per cent a year, over the last few years, and that this improvement can be expected to last for several more years.

Regarding residential construction, it believes that the first half of this year will show a good gain over 1958.

There was a high rate of starts late in 1958. Thus, while some tapering off may be expected toward the close of this year, it looks for construction for the full year to be 10 to 15 per cent above that of 1958, and total dwelling starts (private and public) in 1959, should at least match the 1,209,000 a year earlier.

The decline in industrial construction is

likely to be extended through most of 1959, it believes. However, contract awards for industrial building turned upward in February, for the first time in many months, and projects in the planning stage, coupled with continued recovery in general business and the need to offset rising labor costs with more efficient facilities, should result in an upturn in expenditures in this category, perhaps late in 1959.

Commercial building may experience a slight increase in 1959, after holding about even with the year-earlier level in 1958. Office building has apparently reached a temporary saturation point and will probably show a moderate decline. However, this should be more than offset by a rise in expenditures for stores, restaurants, and garages, stemming from the increase in home building, rapid extension of highways, continued growth of suburban areas, developing urban renewal programs, and continued gains in retail sales attributed to increases in consumer incomes.

Announcing a significant advance in the management of obesity...

BRUATE

Of special importance to physicians confronted with management of the obese, especially when complicated by cardiovascular, diabetic, and other organic disorders...for the very patients who, up till now, could not tolerate anorexic agents.

THE WM:S. MERRELL COMPANY



NEWS TEN

the unique
anorexic agent
free of
CNS stimulation
for the patient
whose weight
must
come down

for the . . .
cardiac/hypertensive obese

New Tenuate provides a pure anoral effect which assures appetite inhibit free of CNs stimulation. EKG stud following intravenous administration of mg. Tenuate (4 times normal daily dose) prove that it does not affect he blood pressure, pulse or respiration.

Weight loss with Tenuate has averaged much as 3 to 5 lbs. the first week, 1 to 2 in succeeding weeks. Resultant welloss, by reducing the cardiac-load, improprognosis... and, frequently when hyptensives lose weight, blood pressure dis noted. Thus Tenuate will fulfill an

PROOF-SAFETY-EKG EVIDENCE"

Human I.V. Studies with Tenuate 10 mg., IV equiv. of 100 mg. oral dose (4 times recommended dose)

				Blood Pressure		EKG	
Patients	Sex	Age	Diagnosis	Before Inj.	After Inj.*	Control	After Ir
E. M.	F	62	Diabetes mellitus. A.S.H.D., compensated. Obesity, postmenopausal.	125/54	116/52	Sinus rhythm. Nonspecific myocardial changes.	No chang
F. S.	М	67	A.S.H.D., mild hypertension. Early congestive cardiac failure.	175/90	175/90	Sinus rhythm. Early LVH.	No chang
M. A.	F	68	Essential hypertension. Degenerative osteoarthritis. Obesity.	207/104	194/98	Sinus rhythm. Normal tracing.	No chang
S. G.	M	30	Normal subject.	126/74	122/78	Sinus rhythm. Normal tracing.	No chang
D. A.	M	33	Normal subject.	112/80	121/90	Sinus rhythm. Normal tracing.	No chang

^{*}This represents the averages of the readings taken at 30-second and 1-minute intervals for 5 minutes prior to injection and 5 minutes injection of the drug. The amount of fluctuation was considered insignificant.

portant need: weight loss in the cardiac and the hypertensive patient.

for the . . .

diabetic obese

Tenuate, with its pure anorexic action, can be used safely in the diabetic ... no effect on blood sugar, urine glucose, or pulse10,11 ... Tenuate produces no metabolic effect ... unlike the amphetamine compounds.

for control of ...

nighttime hunger

With Tenuate free of CNS stimulation, nighttime hunger can now be controlled without insomnia.7 Tenuate may be given at any time of the day or night for 24-hour control of caloric intake.

from the literature

- "There was a notable absence of side effects; appetite control and weight loss were more than satisfactory."-Ravetz4
- . "The data show a virtual absence of any cardiac, circulatory or respiratory effect." - Martin12
- · This drug exhibited an extremely low incidence of side effects and could be administered in the evening without interference with the patient's sleep."-Spielman3
- "This study has not revealed any limitations to the use of TENUATE for the suppression of appetite. It appears to be a safe, well tolerated, clinically effective drug and meets practically all the criteria for an ideal anorexigenic agent."-Ravetz
- · "Up to now, I have treated 18 patients with cardiovascular conditions with the compound, and I feel that TENUATE is safe even for these patients. Compared with other anorexigenic drugs, especially the amphetamines, TENUATE seems to be much safer because it shows practically no effect on blood pressure, pulse rate, and EKG."-Huels13

PROOF - WEIGHT LOSS' "

In a series of 102 patients, the following weight losses were obtained:

Lbs/Week		# Patients		% Patients
0.1-0.9		23		22.54
1.0-1.9			55	53.92
2.0-2.9	200	22		21.56
3.0-4.0	2			1.96
		102 patients		100%

PROOF-

LACK OF SLEEP DISTURBANCE

Series of 266 Patients

- Wakefulness
- Normal Sleep
- Dosage/time of administration -- 8 P.M.

TENUATE is safe, effective for any obese patient

ese

norexic ibition. tudies' on of 10 ily oral t heart, m.

aged as to 2 lbs. weight nproves hyperre drop an im-

fter Inj. change change

change change

change inutes after

NEW TENUATE PURE ANOREXIA FOR ANY OBESE PATIENT : ideal for longterm treatment

TENUATE, unlike stimulant anorexics, is well tolerated throughout the entire course of treatment...there is a remarkable lack of side effects. TENUATE does not produce nervousness, tachycardia, effects upon blood pressure or respiration; and since tolerance, habituation and addiction have not developed with TENUATE, it is ideal for long-term use.

TENUATE suppresses appetite, does nothing more, and this pure anorexic effect produces a satisfactory, progressive weight loss, often with minimum reliance on the patient's strict dieting or caloric counting.

INDICATIONS: Obesity in any patient, including adolescent, geriatric, and gravid, as well as the special-risk situation of the cardiac, hypertensive, and diabetic.

DOSAGE: One 25 mg. tablet one hour before meals. To control nighttime hunger, an additional TENUATE tablet may be taken in mid-evening without fear of inducing insomnia.

FORMULA: Each light blue tablet contains 25 mg. TENUATE (diethylpropion).

SUPPLIED: TENUATE is available in bottles of 100 and 1000 tablets.

REFERENCES

1. Huels, G.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. 2. Horwitz, S.: personal communication. 3. Spielman, A. D.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. 4. Ravetz, E.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. 5. Decina, L. J.: Exper. Med. & Surg. in press. 6. Scanlan, J. S.: in press. 7. Parrish, L.: personal communication. 8. Kroetz and Storck: personal communication. 9. Alfaro, R. D. and Gracanin, V.: to be published. 10. Spoont, S.: personal communication. 11. Illig, A. and Illig, H.: in press. 12. Martin, G. J.: Mich. Acad. Gen. Pract. Symposium, Detroit, 1959. 13. Huels, G.: personal communication.

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THE WM. S. MERRELL COMPANY NEW YORK • CINCINNATI • ST. THOMAS, ONTARIO

FAVORABLE RESULTS

	EARNINGS**							
SECURITY	FULL 1987	YEAR 1958	FIRST QUARTER 1959 1958					
AMERICAN ENKA CORP.	\$.93	\$1.48	\$1.05	\$.27				
ARMCO STEEL CORP.	4.71	3.89	1.43	.75				
BASIC INCORPORATED	1.72	1.30	.77	d .13				
BOHN ALUMINUM & BRASS CORP.	2.04	.46	.77	.11.				
CATERPILLAR TRACTOR CO	4.35	3.48	1.19	.37				
ELECTRIC AUTO-LITE CO.	4.72f	1.68f	1.25	.41				
FERRO CORP.	2.28	2.76	1.09	.51				
FIRTH CARPET CO.	1.40	d .24	.32	.02				
FORD MOTOR CO	5.19	1.75	2.46	.55				
KELSEY-HAYES CO.	6.22	2.47	1.14m	.27m				
LIBBEY-OWENS-FORD GLASS CO.	5.36	4.10	3.28	.72				
LOEW'S INC.	d .09	.15	1.80	.10				
MACK TRUCKS, INC.	4.33	3.03	1.37	.44				
NATIONAL STEEL CORP.	6.13	4.80	2.20	.51				
H. K. PORTER CO.	5.88	3.02	1.30	.51				
ROCKWELL-STANDARD CORP.	3.20	1.75	.92	.45				
SIMMONS CO.	4.87	4.07	1.21	.66				
SIMONDS SAW & STEEL CO.	8.10	5.81	2.33	.97				
SPIEGEL, INC.	1.76	2.51	.97	.05				

4.27

3.05

1.55

.45

DISAPPOINTING STATEMENTS

U. S. RUBBER CO.

ALLIS-CHALMERS MFG. CO.	\$2.11	\$2.34	d \$.43	\$.27
AMERICAN EXPORT LINES, INC.	8.09	10.78	.46	.70
CREAM OF WHEAT CORP.	2.49	2.40	.59	.64
DELAWARE & HUDSON CO.	4.45	1.63	.56	.46
DOUGLAS AIRCRAFT CO.	8.28	4.41	d1.10n	2.32n
EX-CELL-O CORP.	3.89	2.91	.23n	.68n
GENERAL STEEL CASTINGS CORP.	4.15	2.73	.54	.94
INDUSTRIAL RAYON CORP.	.65	d1.65	.14	d.13
LYKES BROS. STEAMSHIP CO.	4.51	3.43	.39	.62
MOORE-McCORMACK LINES, INC.	2.63	2.22	.44	.44
PARKE, DAVIS & CO	1.89	1.89	.47	.48
CHAS. PFIZER & CO.	4.23	4.43	1.17	1.20
SAFEWAY STORES, INC.	2.43	2.60	.55	.57
SCHERING CORP.	3.80	3.05	.60	.85
THATCHER GLASS MFG. CO.	3.16	2.33	.43	.60
UNITED FRUIT CO.	3.59	2.60	.46	.79
UPJOHN CO.	1.27	1.43	.36	.37
WARD BAKING CO.	1.40	1.08	d .02	.02
WESTINGHOUSE AIR BRAKE CO.	2.89	2.10	.47	.55
WORTHINGTON CORP.	6.35	4.76	1.01	1.27

^{**-}Calendar or fiscal year. d-Deficit. f-Excludes non-recurring gains. m-Second quarter ended Feb. 28. n-Quarter ended Feb. 28.

CURRENT

READING

ON FINANCIAL

SUBJECTS

Wall Street firms are glad to supply those who are interested with views on various industries and companies. You can do us a favor if you mention Medical Times as the source of your information. A partial list of such literature that has come to hand recently follows.

SUBJECT

Amer. Tel. & Tel. Emerson Electric Mfg. Montgomery Ward & Co. Mead Johnson & Co. Resistoflex Corp. Barium Steel Corp. Allen Industries, Inc. Walworth Co. Aluminium, Ltd. Peoples Gas Light & Coke Atlantic Coast Line RR. Evans Products Co. United Air Lines, Inc. Fanny May as Trust Investment Cock Full O'Nuts Corp. Railroad Review American Tobacco Co. Reichhold Chemicals, Inc. P. R. Mallory & Co., Inc. Amphenol-Borg Electronics Square D Co. Seabrook Farms Co. Consolidated Foods Corp. Botany Mills, Inc. Chi., Rock Island & Pac. Amer. Bosch Arma Corp. Thatcher Glass Mfg. Co. Northern Pacific Rwy. Safeway Stores, Inc. Newport News Shipbuilding Bell & Howell Co. Domestic vs. International Oils Cook Coffee Co. Bergstrom Paper Co. Continental Oil Co. Nat'l. Distillers & Chem. Garrett Corp.

FIRM

David J. Greene & Co. Shearson, Hammill & Co. Carl M. Loeb, Rhoades & Co. Carl M. Loeb, Rhoades & Co. Carl M. Loeb, Rhoades & Co. Oppenheimer & Co. Oppenheimer & Co. Oppenheimer & Co. F. S. Smithers & Co. Thomson & McKinnon Thomson & McKinnon Thomson & McKinnon Thomson & McKinnon N. Y. Hanseatic Corp. Sutro Bros. & Co. Hayden, Stone & Co. Hayden, Stone & Co. Hayden, Stone & Co. Schweickart & Co. Schweickart & Co. Schweickart & Co. Ira Haupt & Co. Ira Haupt & Co. H. Hentz & Co. H. Hentz & Co. H. Hentz & Co. H. Hentz & Co. Fahnestock & Co. Fahnestock & Co. Fahnestock & Co. Eastman Dillon, Union Securities & Co. Arthur Wiesenberger & Co. A. G. Becker & Co. A. G. Becker & Co. Reynolds & Co. W. C. Langley & Co. Newburger, Loeb & Co. A. C. Allyn & Co. J. R. Williston & Beane W. E. Burnet & Co.

W. E. Burnet & Co.

ORK ADDRESS

72 Wall St. 14 Wall St. 42 Wall St. 42 Wall St. 42 Wall St. 25 Broad St. 25 Broad St. 25 Broad St. 1 Wall St. 2 Broadway 2 Broadway 2 Broadway 2 Broadway 120 Broadway 625 Madison Ave. 25 Broad St. 25 Broad St. 25 Broad St. 29 Broadway 29 Broadway 29 Broadway 111 Broadway 111 Broadway 72 Wall St. 72 Wall St. 72 Wall St. 72 Wall St. 65 Broadway 65 Broadway 65 Broadway 15 Broad St. 61 Broadway 60 Broadway 60 Broadway 120 Broadway 115 Broadway 15 Broad St. 44 Wall St. 115 Broadway

Brush Beryllium Co.

Eagle-Picher Co.

Peabody Coal Co.

General Dynamics Corp.

11 Wall St.

11 Wall St.

your patient has high blood pressure plus one or more of these complications: anxiety congestive failure tachycardia edema/overweight control all the symptoms with just one prescription

new Esidrix 8 Serpasil

Combination Tablets

new Esidrix-Serpasil:



High blood pressure plus tachycardia

Therapy: Esidrix-Serpasil. Rationale: Heartslowing effect of Serpasil to prolong diastole, allow more time for recovery of myocardium, increase coronary blood flow, improve cardiac efficiency. Potentiated antihypertensive effect for greater blood pressure control.



High blood pressure plus congestive failure

Therapy: Esidrix-Serpasil. Rationale: Potent diuretic action of Esidrix to relieve edematous condition, improve cardiac status. Combined antihypertensive action of Esidrix and Serpasil for lowest blood pressure levels. Convenience of combination tablet medication for greater patient acceptance.

one prescription that controls high blood pressure plus its complications



High blood pressure plus edema/overweight

Therapy: Esidrix-Serpasil. Rationale: Diuretic effect of Esidrix to eliminate excess body fluids, bring patient to dry weight. Potentiated antihypertensive effects of Esidrix and Serpasil in combination. Convenience of 1-prescription therapy.



High blood pressure

plus anxiety

Therapy: Esidrix-Serpasil. Rationale: Central action of Serpasil to calm the patient, shield him from environmental stress. Combined antihypertensive action of Esidrix and Serpasil for lowest blood pressure levels. Simplified dosage schedule.

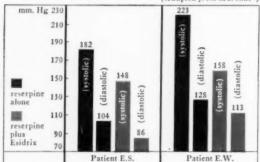
one prescription that controls high blood pressure plus its complications Esidrix-Serpasil Combination Tablets

A new antihypertensive combination—Esidrix-Serpasil is a combination of ESIDRIX^{T.M.} (hydrochlorothiazide CIBA), an improved analog of chlorothiazide developed by CIBA research, and SERPASIL® (reserpine CIBA). Each tablet combines the potent diuretic and mild antihypertensive effects of Esidrix with the antihypertensive, heart-slowing and calming effects of Serpasil.

Indications—Esidrix-Serpasil is indicated in all grades of hypertension, particularly when one or more of the following complications exist: anxiety, tachycardia, congestive failure, pitting edema, edema of obesity, other edematous conditions.

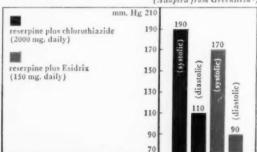
More effective than either drug alone—Investigators who have used the combination of hydrochlorothiazide and reserpine report that it is more satisfactory than either drug alone.

(Adapted from Maronde1)



More effective than chlorothiazide-reserpine combinations— Many patients resistant to chlorothiazide-reserpine therapy have shown significant clinical response when Esidrix-Serpasil was started. The blood pressure of patient shown below was only slightly reduced on chlorothiazide and reserpine. When Esidrix was substituted for chlorothiazide, lower blood pressure levels were achieved.

(Adapted from Greenstein2)



Dosage—Esidrix-Serpasil is administered orally in a dosage range of 1 to 4 tablets daily. Each tablet contains 25 mg, of Esidrix and 0.1 mg, of Serpasil. The total daily dose may be given after breakfast or in 2 or 3 divided doses. Dosage in every case should be individualized and adjusted to meet changing needs.

Since the antihypertensive effect of Serpasil is not immediately apparent, the maximal reduction in blood pressure may not occur for 2 weeks. At this time the dosage of Esidrix-Serpasil should be adjusted to the amount necessary to obtain the desired blood pressure response. For maintenance, as little as 1 tablet daily may be sufficient.

In cases of more severe hypertension, dosage of Esidrix-Serpasil can be revised upward to 4 tablets daily. When necessary, more potent antihypertensive agents such as Apresoline, Ecolid or other ganglionic blockers may be added. As Esidrix-Serpasil potentiates the action of other antihypertensive drugs, such additions to the regimen should be gradual and effects carefully observed. When Esidrix-Serpasil is started in patients already receiving ganglionic blockers, such as Ecolid, dosage of the latter should be immediately reduced by at least 50 per cent.

Side effects and cautions—As when any diuretic agent is used, patients should be carefully observed for signs of fluid and electrolyte imbalance. Esidrix in therapeutic doses is generally well tolerated. Side effects, even from large doses, have been few. Since Esidrix greatly reduces the amount of Serpasil needed, the incidence of side effects sometimes encountered with Serpasil is diminished.

Complete information on Esidrix-Serpasil available on request.

Supplied—Esidrix-Serpasil Tablets, 25 mg./0.1 mg., each containing 25 mg. of Esidrix and 0.1 mg. of Serpasil; bottles of 100.

References-1. Maronde, R. F.: Clinical Report to CIBA. 2. Greenstein, S.: Clinical Report to CIBA.

APRESOLINE hydrochloride (hydralazine hydrochloride CIBA)
ECOLID chloride (chlorisondamine chloride CIBA)



Combination Tablets



"THOSE WOMEN DRIVERS"

For twenty-three years now Socony Mobil has staged an annual contest in which various automobile manufacturers pit their cars against each other to see which can get the most mileage per gallon, over various types of highway. The one this year was the longest of the twenty-three, 1,898 miles, ending in Kansas City.

The cars are divided into six classes. Women drivers took two of the possible six prizes, and they narrowly missed making it a three to three decision with the men drivers.

The run began in Los Angeles. Entrants drove through desert sun, rain and mountain snow along the way. Much of the driving was at night. All cars were stock models and winners ran the range of the American auto industry.

Average miles per gallon for all 47 competing cars was 19.4396 miles per gallon. Male drivers averaged 19.4595 miles per gallon, slightly better than the 19.3925 miles per gallon women's average.

FRAGRANT MEN

We learn from perfume manufacturers that men are edging their way into the growing army of perfume consumers. Jan Hansum, general manager of Kent of London, which started as a manufacturer of brushes at the time of the American Revolution, says his company is now turning out "male fragrances" for the first time. Incidentally, from another manufacturer we learn that the familiar term "perfume" is outmoded; there is a move on to change to the more alluring term, "fragrance."

"Sales of men's fragrances have risen sharply during the post-war period and we think there are still bigger gains ahead," Mr. Hansum said. "Sales of after-shave lotions already surpass volume for any other form of fragrance, including women's perfumes."

He cites figures for 1957—latest year available—showing retail sales of after shave lotions reached \$39 million, against \$31 million for sales of perfume.

The entire cosmetics and toilet-goods industry accounts for retail sales of \$250 million a year.

He attributes men's interest in fragrances to modern emphasis on cleanliness which is associated with a good smell and to higher living standards. Another big factor is that women, when they don't know what else to buy for a man, usually pick up some toiletry products.

PROTECTING THE TILL

Would-be bank robbers face a new device that they may regard as unfair competition. It is a hidden camera that is both noiseless and bullet proof, developed by the Mosler Safe Co. and designed to take candid shots of bandits at the time they are plying their trade.

There was a day when bank robberies were mostly carried on by gangs that devoted their attention largely to the vaults. Improvements in security systems have reduced payoffs in that particular field and the authorities tell us that now the trend is to the lone bandit, who attacks the teller's cage. To add to this man's troubles the Mosler company has installed its cameras in one hundred banks and it reports orders are increasing substantially. The device can be set off in various manners, by foot or hand, and it runs for about two minutes, catching the robber in the act and thus eliminating the need for eyewitnesses.

Only two banks so equipped have been robbed, thus far. In one case, in Cleveland in 1955, the camera had been installed for only two hours when a robber and his two female assistants made a heist. They were behind bars within thirty-six hours.

TOUGH ON FORGERS

The Amalgamated Union of Check Forgers may have an action against Teleregister Corporation and Le Febure Corporation. They are developing a device that will enable tellers instantly to verify a customer's signature.

It eliminates the need for a signature look-up file and is virtually forgery-proof. It can be adapted to present bank systems rapidly and economically, the companies said. The device was designed by Teleregister Corp. and will be commercially available within eight months and will be made and distributed by Le Febure.

The system is said to permit the encoding of an actual signature in such a way that it cannot be read by the naked eye. A simple decoding device permits easy reading of the encoded signature for verification purposes.



Inquiries are received from a number of investors asking for information regarding specific securities. Answers are presented here on the basis of information received from recognized analysts and represent their considered opinion.

Monarch Machine Tool—It did poorly in 1958, because its customers reduced their capital spending. Since this Spring there has been a good rebound in new orders for machine tools and Monarch should benefit.

Westinghouse Air Brake—Earnings of \$2.10 a share last year were off considerably from those of the preceding year, although not as bad as in 1954, which also was a recession year. The railroad equipment business is slow but we must remember the company has become active in electronics, where the prospects are brighter.

Anderson-Prichard Oil—Its outlook is considerably better. Last year it earned \$2.08 a share. Estimates for this year run as high as \$3.25. Its crude oil production and refined

products sales have increased. Its name frequently crops up in merger rumors, but there is nothing official along that line.

Columbus & Southern Ohio Electric—The current dividend rate appears secure. Earnings last year were \$2.02 a share against \$2.57 and the chances of a major improvement appears to lie with the Public Service Commission, which has been asked to grant better rates. The company's return on its property value is low, so probably some small rate increase will be granted.

Interchemical Corp.—Earnings the last few months have expanded rapidly. For instance in the first quarter it had sales of \$29,500,000 and earnings of 63 cents a share against \$25,900,000 and 26 cents a share in the like period of 1958. Net for this year is estimated at between \$2.50 and \$3 a share, which would mean a new peak. The company is a leading producer of printing inks, industrial coatings, textile colors and inked ribbons.





- a clear...colorless...quick-drying solution.
- forms an odorless, invisible protective film over infected and susceptible areas.
- bactericidal on application...bacteriostatic over a prolonged period of time.
- ideal for prophylactic or adjunctive therapy.

Pro-Blem contains 70% isopropyl alcohal—a potent cutaneous bactericidal agent, 0.1% hexachlorophene—an effective cutaneous bacteriostatic agent and 0.5% cetyl alcohol—to bind the hexachlorophene to the skin for prolonged bacteriostatic effect

Pro-Blem should be opplied 3 to 4 times daily, or at more frequent intervals, with a wad of cotton or directly by hand and massaged onto affected areas and allowed to dry. Optimum results are obtained with continued use.

HOYT PHARMACEUTICAL CORP. . NEWTON, MASSACHUSETTS

Pro-Blem is also highly effective in the treatment of sycosis vulgaris and other infectious dermatitis of the face.



Alco Products—There are signs of a better rate of incoming orders and presumably this year's earnings should approximate the \$2.32 shown last year, which was up sharply from 1957. The company is in a strong financial position, and less than a year ago was able to redeem the last of its 7 per cent preferred stock.

United Artists—Theatre attendance is picking up. This company has never produced a motion picture, but it has had a hand in financing many that it has distributed. It intends to release 28 major films this year, an increase of 75 per cent over the "A" films it released last year. Net income has been moving higher for the last seven or eight years.

Western Union — Management looks for earnings this year of \$2.50 a share, against \$1.89 in 1958, assuming the improved trend in business continues.

Midland-Ross — Its contract to produce Dodge and Plymouth frames expires on completion of the production schedule on 1959 models, and is not expected to be renewed. Until it can acquire profitable companies to make up for this loss, its earnings outlook will be impaired. At the moment its dividend appears secure, but it is questionable for the longer term.

Socony Mobil — Earnings for 1959 should approximate \$4 a share if there is a moderate improvement in product prices and no new unsettlement in the Middle East. Last year's earnings were \$3.24.

Warren Brothers—The company is the leading paving contractor and thus benefits from highway construction. Last March its volume of incoming orders improved to the point where it had uncompleted work of \$30,826,000. No estimate has been made yet on its 1959 earnings but in its favor is the assumption the highway program has not yet reached its peak and the company appears capable of turning orders into earnings.



FOR PROVEN MENOPAUSAL BENEFITS

The vast majority of menopausal women, especially on the first visit, are nervous, apprehensive, and tense. PMB-200 or PMB-400 gives your patient the advantage of extra relief from anxiety and tension, particularly when the patient is "high strung," under prolonged emotional stress, or when psy-



chogenic manifestations are acute. Proven menopausal benefits are confirmed by the wide clinical acceptance of "Premarin," specifically for the relief of hot flushes and other symptoms of estrogen deficiency, together with the well established tranquilizing efficacy of meprobamate.

Two potencies that will meet the needs of your patients: PMB-200 — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 200 mg. of meprobamate. When greater tranquilization is necessary you can prescribe PMB-400 — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 400 mg. of meprobamate. Both potencies are available in bottles of 60 and 500.

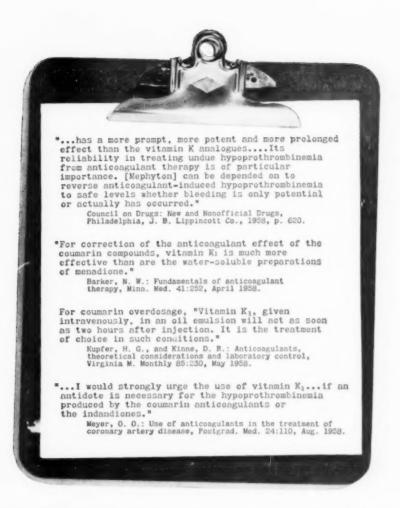
Ayerst Laboratories New York16,N.Y.
Montreal, Canada

5916

Meprobamate, ficensed under U.S. Pat. No. 2,724,720

Consensus:
The preferred antidote
for anticoagulant-induced
hypoprothrombinemia
is 'Mephyton' (vitamin K₁).





chemically identical with naturally-occurring vitamin K1

Mephyton & Vitamin K,

Dosage: Orally, to modify anticoagulant effects: 5 to 10 mg. initially; 15 to 25 mg. for more vigorous action. Intravenously, for anticoagulant-induced bleeding emergencies, 10 to 50 mg.; may be repeated as indicated by prothrombin time response. (Some clinicians advise their patients to keep a supply of tablets on hand at all times; if gross bleeding occurs, the patients are instructed to take 10 mg. and phone the doctor.)

Supplied: Tablets, 5 mg.; bottles of 100. Emulsion, each 1-cc. ampul contains 50 mg.; boxes of 6 ampuls.

MEPHYTON is a trademark of Merck & Co., Inc.



R Prescription For Travel

Summer vacationing in the Caribbean is on the upswing. Off-season travel rates are lower, prices at luxury hotels way down. But best of all, there are no crowds.

Off-Season Travel to the CARIBBEAN

Off-season travel to the Caribbean has picked up in recent years. Lower rates, less crowding and weather only slightly warmer than in winter are the chief attractions for vacationers.

Special air rates are in effect during the summer. Pan Am, for instance, offers a circle excursion that covers nine of the West Indies islands and touches South America. Limited to 30 days and to tourist class accommodations, the fare from Miami is \$203.50 or \$48.50 less than the year-round ticket. From New York the excursion ticket is \$248, a saving of \$61.80.

Another 30-day excursion offers first class service between Miami and Kingston and Montego Bay (Jamaica) for \$92.

Hotel rates are from 20 to 50 percent below winter prices. In Jamaica, the luxurious Tower Isle hotel charges \$28 for a double room that goes for \$50 in the winter.

Island of Jamaica

But let's take a closer look at Jamaica, one of the many islands of the West Indies. It is situated 90 miles south of Cuba and some 1500 miles south of New York. The trade

winds and a high elevation assures a comfortable summer climate (it is reported that the temperature may go as high as 86 degrees). The "rainy months" are May and October; Kingston, the capital, has an annual rainfall of from 30 to 35 inches.

There are five distinct resort areas on the island, each offering many activities and diversions. For something unusual in the way of trips, there is the mountain journey up to the Maroon capital of Accompong. Here in the jungle fastness in the towering highlands are the Maroons, an independent race of people who still live in the manner of their African forebears.

Descendants of runaway slaves, the Maroons live in a peaceful enclave, separate and apart from Jamaica. They have their own laws and their own way of life, but they welcome visitors. Tour agents in Montego Bay organize this all-day outing. The cost is \$30 round trip, for four persons.

Another intriguing trip — and one that is steadily gaining popularity—is the cross-island train ride between Kingston and Montego Bay. The small-gauge railway crosses the roof of

Continued on page 144a

explodes trichomonads

VAGISEC

LIQUID AND JELLY

93.1% "cure" rate using strictest criterion negative cultures for 3 consecutive months

Acres impredients in VAGISEC liquid: Polyoxyethylene nonyl phenol fod one-tiny one diamone tetra acetate, Sodium dioctyl cultoruccinate (in addition, VAGISEC jelly contains Alcohol 5 %, by ee-ghi

1. Gioriando, S. W., and Brandt, M. L., Am. J. Obst. & Gynec 76:666 (Sept.) 1958. 2. Weiner, H. H.: Clin. Med. 5:25 (Jan.) 1958.

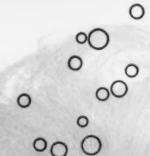
VADISEC and RAMSES are registered trade-marks of Julius Schmid, Inc.

Repeated negative cultures, following treatment with VAGISEC liquid and jelly, confirmed "cures" in 93.1% of trichomoniasis patients (54 of 58) treated by Giorlando and Brandt. These patients were followed up, using cultures, for a minimum of three months, many for as long as eight months. All remained negative. Using the same strict criterion of negative cultures, Weiner achieved comparable success?—46 of 51 patients freed of trichomonads.

VAGISEC therapy is consistently characterized by immediate relief of painful symptoms – few recurrences.

To help rule out conjugal re-infection—Husbands willingly cooperate as a part of the wife's treatment when RAMSES," the pure gum rubber prophylactics with "built-in" sensitivity, are suggested for use routinely.

JULIUS SCHMID, INC. 423 West 55th Street, New York 19, N. Y





EFFERVESCENT

Ideal for the range of constipation from childhood

carboxymethylcellulose with a peristaltic stimulant







BETTER RESULTS

- produces natural, soft, well-formed stools.
- lubricating, non-irritating bulk, low-in-sodium.
- greater hydrophilic capacity... gelling takes place in the intestine, not in the stomach.
- mild peristaltic stimulation assures predictable results.

MORE FLEXIBLE

 granular powder form allows infinite dosage variation for the full range of constipation... occasional to obstinate...from childhood to geriatric.

EFFERVESCENT

 easy-to-take...really tastes good, lemon-flavored.

CONTENTS:



THE STUART COMPANY PASADENA, CALIFORNIA

CLEAR, PLEASING, DELIGHTFULLY REFRESHING

NEW BULK LAXATIVES

from occasional to obstinate... to geriatric

psyllium with a mild peristaltic stimulant

BETTER RESULTS

- · more soft, lubricating bulk and milder peristaltic stimulation combine to produce soft, formed stools.
- · sodium-free, non-irritating.

MORE FLEXIBLE

· granular powder form allows infinite dosage variation for the full range of constipation ... occasional to obstinate...from childhood to geriatric.

EFFERVESCENT

· easy-to-take . . . really tastes good, lemon-flavored.

CONTENTS:

Each 7 Gm. pink granular powder (approximately 1 rounded teaspoonful) provides:

Psyllium hydrocolloid 3 Gm. the highly purified hemicellulose of the husk of the psyllium seed. (Plantago ovata, Forsk)

Di(acetylhydroxyphenyl)isatin 3 mg.

DOSAGE - BOTH EFFERGEL AND EFFERSYL:

Adults: initially, I rounded teaspoonful in a glass of water, morning and night. Dosage may be increased or decreased to suit needs.

Children 3 years and over: initially, 1 level teaspoonful in one-half glass of water upon retiring. Subsequent dosage to be adjusted according to results.

Availability: 4-ounce and 9-ounce bottles at all pharmacies.

Write for generous tasting samples.



with new low dosage

NEW

NEW

NEW

- combines the anti-inflammatory, antiallergic and antihistaminic effects of two agents—ARISTOCORT and chlorpheniramine which, separately, have been proved highly effective in the treatment of allergy
- permits greater latitude in adjusting dosage to minimum level needed for maintenance, because ARISTOCORT and chlorpheniramine are supplied in the lowest dose tablets available for each component alone
- e supplies ascorbic acid for increased demand in stress conditions

Indications: Generalized pruritus of allergic origin; hay fever, allergic rhinitis, perennial asthma, seasonal and perennial rhinitis, vasomotor rhinitis; drug reactions and other allergic conditions.

Dosage: One to eight capsules a day in divided doses.

Dosages should be established on the basis of individual therapeutic response.

Precautions: Drowsiness may occur, and is usually due to the antihistamine effect. Occasionally this may also cause vertigo, pruritus and urticaria. Because of the low dosage, side effects with Aristomia have been relatively infrequent and minor in nature. However, since Aristocort Triamcinolone is a highly potent glucocorticoid with profound metabolic effect, all precautions and contraindications traditional to cortico-

steroid therapy should be observed. Discontinuance of therapy must not be sudden after patients have been on steroids for prolonged periods. It must be carried out gradually over a period of as much as several weeks,

Further information available on request.

Supply: Each Aristomin Capsule contains:

Bottles of 30 and 100

References: 1. Maurer, M. L.: Clinical Report, cited with permission. 2. Levin, L.: Clinical Report, cited with permission. 3. Gaillard, G. E.: Clinical Report, cited with permission.





comments by clinical investigators:

"I would conclude that Aristomin is truly a worthwhile aid in treating allergic problems."

"The results have been uniformly good. The patients have stated that their symptoms were very much relieved. I have not encountered any side reactions except from one patient, who complained of some drowsiness, which I attribute to the antihistamine," ²

"In general...it [Aristomis] is an excellent product. Over-all, it appears to be more effective than any simple antihistamine we have used. Despite the fact that we employed it in the treatment of a variety of nonselected individuals and problems, we had excellent and good results in 25 of the 39 patients."

(lung x 65, Injected with carbon-gelating



LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

the island in a 7-hour journey that gives visitors close, intimate glimpses of Jamaica.

Tiny hamlets seemingly untouched by time . . . hillside farms of banana, cane, coffee and citrus . . . quaint little stations where vendors of fruit and native handicrafts ply their wares in colorful trainside markets . . . broad vistas of mountains and valleys, rich with tropical vegetation. These are some of the sights that reward the visitor who makes this journey which costs only \$3.

River Trip

Perhaps the most dramatic adventure of all is the ride down the Rio Grande. This is a pastime that dates back to the earliest days of Jamaica. The trip is made on a bamboo raft piloted by a native raftsman. Two persons sit on the raft which goes downstream towards the sea for about 3½ miles. It is exciting but entirely safe, and the cost is just \$4 for two on a raft.

All the resort areas—Kingston, Montego Bay, Ocho Rios, Port Antonio and Mandeville —have their own special list of things to do and to see. There are ruins and historic places to see around Kingston; there are picnic spots to be explored and enjoyed on the North Shore. Mandeville, in the cool central uplands of the island, has its own special charm for summer holidayers.

Mandeville offers some of the best golf and fishing on the island. For the energetic and adventurous there is hiking in the misty mountains and lush valleys, and caves to explore.

At sundown, the nightclubs offer entertainment to the beat of calypso and mento music. Visitors can see and try the acrobatic Limbo dance and thrill to John Canoe and other native acts. They can sample local foods such as the highly-spiced curried goat.

Flights to Jamaica

Regular scheduled flights out of the U.S. aerial gateways of New York, Miami and New Orleans, as well as out of the Canadian terminals of Montreal and Toronto, link Jamaica with practically every major city in North America. Visitors from any part of the United States and Canada who wish to come down to the island for summer vacations can get there easily and quickly.

The two airlines which serve Jamaica out of New York have announced their summer schedules.

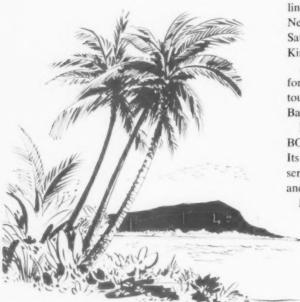
Avianca Airlines, an affiliate of Pan Am. offers five flights weekly to Jamaica. The airline's famed "El Colombiano" flight leaves New York every Monday, Wednesday, Friday, Saturday and Sunday for Montego Bay and Kingston.

A departure time of 10 A.M. has been set for these flights, which carry first-class and tourist-class passengers. Arrival at Montego Bay is timed for 4.20 P.M.

British Overseas Airways, better known as BOAC, is the other operator out of New York. Its summer schedule offers non-stop Brittania service, three times a week, between New York and Montego Bay.

Pan Am's Jamaica flights, originating in Miami, offer tourist as well as firstclass accommodation.

Daily first-class flights leave Miami at 10 A.M. to arrive at Montego Bay at 12.05 P.M. and at Kingston at 1 P.M. Northbound flights leave Kingston daily at 11.15 A.M. and Montego



25,000,000 courses of treatment - and "resistance" problems

*Conservative estimate based on combined use of all FURACINI preparations since 1945.

FURACIN

In clinical use for more than 12 years and today the most widely prescribed single topical antibacterial, Funacin—like other nitrofurans—remains effective against pathogens which have developed, or are prone to develop, resistance to other antibacterial agents. There has been no evidence that originally sensitive strains of staphylococci or other bacteria lose their susceptibility to Funacin in any significant degree.

the wide-spectrum antibacterial exclusively for topical use ... in dosage forms for every topical need

Available as Soluble Dressing, Soluble Powder, or Solution. Also in Yaginel and Urethral Suppositories and in special formulations for eye, ear and nose.

one of the unique attraherors - products of Enton research Enton Laboratories, Harwich, Haw York Bay at 12.55 P.M. to return to Miami at 3 P.M.

Pan-Am operates tourist flights on Tuesdays, Thursdays, Saturdays, southbound, leaving at 9 A.M. from Miami. The northbound flights go to Miami on Sundays, Wednesdays and Fridays.

More Daily Flights

British West Indian Airways runs daily flights between Jamaica and Miami. Operating a total of 22 flights weekly, the schedule contains two special features. BWIA continues to operate its convenient afternoon flight from Miami. Leaving at 4.15 p.m. daily, this flight provides same-day through-travel to Jamaica from most U.S. cities, putting visitors into their Jamaican hotels before dinner-time.

Convenient morning flights leave Miami at 8 A.M. on Mondays, Tuesdays and Saturdays, providing overnight connections from key U.S. cities for holidayers going down to Jamaica.

Four other airlines serve Jamaica—KLM (Royal Dutch Airlines) and Avensa, out of Miami; Delta, out of New Orleans; Trans-Canada Airlines (TCA), out of Toronto. All four are also offering summer schedules down to Jamaica. In addition, BOAC, which extended its operations to Montreal last winter, is providing this service out of Canada this summer.

TO OUR READERS: You are avid travelers—as statistics show—taking trips for pleasure and relaxation as well as to attend professional meetings in this country and abroad. In addition, you often prescribe travel for your patients. Thus, the purpose of this department is to give you concise, practical information about one of your strong interests—travel. As a special service, this section will carry each month a calendar of important forthcoming national and international medical meetings.

U.S. domestic airlines are also taking more interest in Jamaica. Two of the major lines—Capital and TWA—have entered into interline arrangements with BWIA for the handling of Jamaica-bound traffic. National Airlines has always included Jamaica in its flight connections at Miami.

Eastern Airlines, flying regularly between New York and Miami, provides a link with the island through the two U.S. international gateways. American Airlines connects with Jamaica-bound flights at New York.

With this range and variety of air accommodation available, summer vacations will certainly have no difficulty getting transport to Jamaica.

SCHEDULE OF EVENTS

Jamaica's calendar of events is by no means light during the summer. Race meets, golf matches and other sports events are the main attractions. A list supplied by the Jamaica Tourist Board shows this lineup of attractions during the summer months.

JUNE

- JUNE 12: Ladies' Match Play Golf Championships, Manchester Club, Mandeville.
- JUNE 13: Queen's Birthday. Public Holiday. Military Parade, Up Park Camp, Kingston.

Ladies' Match Play Golf Cham-

pionships, Manchester Club, Mandeville.

Jamaica Turf Club race meeting, Little Ascot, near Kingston.

Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

In the Treatment of Rheumatic Disorders Greater stability of maintenance dosage minimizes risks of hormonal imbalance

In Sterazolidin, the anti-inflammatory actions of prednisone and Butazolidin* are combined to permit lower effective dosage of each. Clinical experience has indicated that patients can be well maintained on this combination over prolonged periods with relatively low, stable dosage levels of each component, thus minimizing the problems arising from excessively high doses of corticosteroids. Other side effects have also been gratifyingly few. Antacid and spasmolytic components are contained in Sterazolidin capsules for the benefit of patients with gastric sensitivity.

Sterazolidine: Each capsule contains prednisone 1.25 mg.; phenylbutazone 50 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

Detailed information available on request.



June 14: Ladies' Match Play Golf Championships, Manchester Club, Mandeville.

Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

JUNE 20: Jamaica Turf Club race meeting, Little Ascot, near Kingston.

> Ladies' Match Play Golf Championships, Manchester Club, Mandeville.

Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

June 21: Festival Week, University College of the West Indies, Hope, Kingston.

Ladies' Match Play Golf Championships, Manchester Club, Mandeville.

Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

JUNE 27: Jamaica Turf Club race meeting, Little Ascot, near Kingston.

Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

Windup, Festival Week, University College of the West Indies, Hope, Kingston.

JUNE 28: Men's Match Play Golf Championships, Caymanas Golf & Country Club, Kingston.

June 30: JAA National Relay Carnival, Sabina Park, Kingston.

ALSO DURING JUNE: .303 riflle shooting each Sunday at Harbour Head Range, Kingston.

Weekly club sailing events, Royal Jamaica Yacht Club, Kingston. Saturday, Sunday.

JULY

JULY 1: JAA Relay Carnival, Sabina Park, Kingston.

JULY 11-31: All Jamaica Lawn Tennis Championships, St. Andrew Club, Kingston.

JULY 14-15: JAA National Athletic Championships, Sabina Park, Kingston.

JULY 18: Jamaica Turf Club race meeting, Little Ascot, near Kingston.

ALSO DURING JULY: .303 rifle shooting each Sunday at Harbour Head Range, Kingston.

Weekly club sailing events, Royal Jamaica Yacht Club, Kingston. Saturday - Sundays.

AUGUST

August 1: Emancipation Day. Public Holiday.

Denbigh Agricultural Show, largest fair in the West Indies. Livestock judging and industrial exhibition, near Mandeville.

Royal Jamaica Yacht Club Mid-Year regatta, Kingston Harbour.

Inaugural race meeting, Caymanas Park, near Kingston.

August 3: Race meeting, Caymanas Park, near Kingston.

August 15-16: Jamaica Water Ski, Inboard and Outboard Championships, Morgan's Harbour, Port Royal.

August 18-22: Junior All-Jamaica Tennis Championships, St. Andrew Club, Kingston.

August 24-29: Hardcourt Tennis Championships, Manchester Club, Mandeville.

ALSO DURING AUGUST: .303 riflle shooting each Sunday at Harbour Head Range, Kingston.

before the pram is occupied... and after

provide vitamin-mineral support during pregnancy and throughout lactation

Just one NATABEC Kapseal daily, as prescribed by her physician, provides the gravida or the nursing mother with a well-balanced formula of vitamins and minerals, promoting better health both for mother and child.

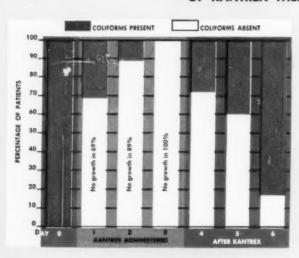
> dosage: As a vitamin-mineral supplement during pregnancy and throughout lactation, one Kapseal daily, or more, as required. Available in bottles



For preoperative



COLIFORMS REMOVED FROM STOOLS OF MAJORITY OF PATIENTS AFTER ONE DAY OF KANTREX THERAPY



In this study, coliforms were found in all 18 control specimens before KANTREX was administered. By the end of the first day of therapy, they had been removed from 69% of the patients; by the end of the second day, from 89% of the patients; and by the end of the third day, from all of the patients. Following cessation of therapy, the intestinal microflora returned rapidly to normal. KANTREX dosage consisted of 1 Gm. (2 capsules) every hour for 4 hours, then 1 Gm. every 6 hours for 72 hours.

bowel sterilization-

"the only single agent" to be recommended out of 30 drugs, combinations and dosages studied'...

NTREX

KANAMYCIN SULFATE

CAPSULES

FOR ORAL USE ONLY
Not for systemic
infections

Based on experience with "more than 30 drugs, drug combinations, and drug dosages" for bowel sterilization, Cohn reported that Kantrex is "the only single agent" that can be recommended for such use, and is "superior to neomycin." In another report, Cohn and Longacre cited the advantages of Kantrex as: negligible absorption from the gastrointestinal tract, "rapid and satisfactory control of streptococci, coliforms, and clostridia," and the failure of yeasts or staphylococci to proliferate during therapy. Still others have termed it "an excellent intestinal antiseptic."

DOSAGE FOR PREOPERATIVE BOWEL STERILIZATION: 1.0 Gm. (2 capsules) every hour for 4 hours, followed by 1.0 Gm. (2 capsules) every 6 hours for 36 to 72 hours. Duration of therapy depends on condition of patient, concurrent mechanical cleansing, and clinical judgment of the surgeon.

Kantrex Capsules are also indicated in the treatment of intestinal infections due to kanamycin-sensitive organisms, including Shigella and Salmonella.

Supply: Kantrex (kanamycin sulfate) Capsules, 0.5 Gm., in bottles of 20 and 100. References: 1. Cohn, I., Jr.: Annals N. Y. Acad. Sci. 76:212, 1958. 2. Cohn, I., Jr., and Longacre, A. B.: S. G. & O. 108:100, 1959. 3. Finegold, S. M., et al.: Annals N. Y. Acad. Sci. 76:319, 1958.

KANTREX Sensitivity Discs and comprehensive literature available on request.





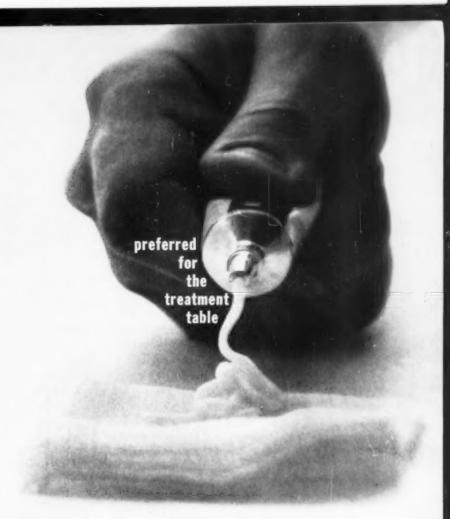
MEDICAL TIMES TRAVEL NOTES

A roundup of travel and vacation news of current interest

- ◆ The 1959 edition of the European Travel Commission's motoring guide to Europe is now available free through travel agents. The publication, titled "Europe—Motorists' Paradise," comes in a small size for use as a readyreference guide during a tour. It covers such subjects as renting a car; car purchase-repurchase plans; liability insurance; traffic signs; gasoline prices; traffic regulations.
- American style motels are springing up in Europe. Strategically located along major tourist highways, they free the motorist of the need for spending the night in large congested cities. Most European motels boast excellent restaurants, comfortable rooms with private bath and, in some cases, TV. Rates, in general, are below those in the U.S.
- Elimination of all customs papers for private automobiles entering France has just been announced by the French government. Last year a "tourist sticker" was substituted for more formal documents. This year the sticker is also eliminated. Only proof of insurance (an "International Certificate" valid for France, or a "Frontier Policy") is henceforth required for entry. Upon presentation of the insurance document at any major bank, Americans can purchase gasoline coupons which reduce the price of gasoline by 21 percent.
- Most Western European countries maintain official tourist information offices in the U. S. which offer all sorts of helpful free booklets, maps, coming events lists and other tripplanning aids to Americans bound for transatlantic holidays. Write to: National Tourist Office of (name of country you intend to visit), Box 258, Dept. ETC, New York 17, N. Y.
- Handy maps for touring in the United States can be obtained from The National Survey, Chester, Vt. Costing 10 cents each, the

- maps are a combination highway map and listing of accommodations. Map No. 1 covers New England; No. 2 covers Ontario, New York, Pennsylvania, New Jersey, Maryland and Delaware south to Washington, D. C.; No. 3 covers Michigan, Ohio, northern Kentucky, most of West Virginia and western Ontario.
- Something new in European tours has been announced by Renault, Inc., the French automobile maker. It is a tour by car that concludes with the tourist taking the car back with him to the U.S. Scheduled for late summer and early fall, two 32-day tours will leave from New York on September 5 and September 26. Tour members will find their new Renault Dauphines waiting for them on arrival at Paris' Orley airport. The motorcades, limited to 26 cars each, will leave Paris after a six-day stay. Itinerary includes the French and Italian Riviera, Switzerland, Germany and Luxembourg. All-inclusive cost, including shipment of the car to the U.S., is \$2538, with additional passengers paying \$1100 each. (Current price of a Dauphine in New York City is about \$1700.)





because Neo-Polycin Ointment

helps clear topical infections promptly

Neo-Polycin® provides neomycin, bacitracin and polymyxin, the three antibiotics preferred for topical use because this combination is effective against the *entire* range of bacteria causing most topical infections...has a low index of sensitivity...and averts the risk of sensitization to lifesaving antibiotics, since these agents are rarely used systemically. And Neo-Polycin provides these three antibiotics in the unique Fuzene® base, which releases higher antibiotic concentrations than is possible with grease-base ointments. Each gram of Neo-Polycin contains 3 mg. of neomycin, 400 units of bacitracin and 8000 units of polymyxin B sulfate in the unique Fuzene base. Supplied in 15 Gm., tubes PITMAN-MOORE COMPANY, DIVISION OF ALLIED LABORATORIES, INC., INDIANAPOLIS 6, INDIANA



Calendar of Meetings

A listing of important national and international medical conferences

JULY

Denver, Colo. Rocky Mountain Cancer Conference, July 22-23. *Contact:* Dr. N. Paul Isbell, 835 Republic Bldg., Denver 2.

Montreal, Quebec. International Congress of Pediatrics, July 19-25. *Contact:* Dr. R. L. Denton, 2300 Tupper St., Montreal 25, Quebec.

Copenhagen, Denmark. International Psychoanalytical Association, July 26-30. *Contact:* Miss Pearl King, 37 Albion St., London, W. 2, England.

Edinburgh, Scotland. British Medical Association, July 18-24. *Contact:* The Secretary, British Medical Association, Tavistock Square, London W. C. 1, England.

Portland, Maine. International Medical Conference on Mental Retardation, July 27-31. *Contact:* Dr. Ella Langer, State House, Augusta, Me.

Munich, Germany. International Congress of Radiology, July 23-30. *Contact:* Prof. Hans V. Braunbehrens, Forsthausstrasse 76, Frankfurt am Main, Germany.

AUGUST

Barcelona, Spain. World Federation for Mental Health, Aug. 30-Sept. 5. *Contact:* Miss Esther M. Thornton, 19 Manchester St., London, W. 1, England.

Buenos Aires, Argentina. International Congress of Physiological Sciences, Aug. 9-15.

Contact: A. O. M. Stoppani, Facultad de Ciencias Medicas, Paraguay 2151, Buenos Aires, Argentina.

Madrid & Barcelona, Spain. International Congress for the History of Science, Aug. 30-Sept. 6. *Contact:* Prof. J. Vernet, Universidad de Barcelona, Barcelona, Spain.

London, England. International Congress for Speech and Voice Therapy, Aug. 17-22. *Contact:* Miss M. Carter, 46 Cannonbury Square, London, N. 1, England.

SEPTEMBER

Istanbul, Turkey. European Congress on Rheumatism, Sept. 18-21. *Contact:* Prof. Hami Kocas, Medical School, Ankara, Turkey.

Paris, France. World Congress for Physical Therapy, Sept. 6-12. *Contact:* Miss M. J. Neilson, Tavistock House, Tavistock Square, London, W. C. 1, England.

Montreal, Canada. World Medical Association, Sept. 7-12. *Contact:* Dr. Louis H. Bauer, 10 Columbus Circle, New York 19, N. Y.

Geneva, Switzerland. International Symposium on Anti-Infectious and Antimitotic Chemotherapy, Sept. 12-13. *Contact:* Dr. P. Rentchnick, Case Stand 471, Geneva, Switzerland.

Munich, Germany. International Cardiovascular Society, Sept. 18-20. *Contact:* Dr. Henry Haimovici, 715 Park Ave., New York 21, N. Y.

Genoa, Italy. Fourth International Course on Tomography, Sept. 28-Oct. 3. *Contact:* Prof. Neopolo Macarini, Istituto di Radiologia, Ospedale S. Martino, Genoa. in bronchial asthma

Decadron

DEXAMETHASONE

treats more patients more effectively

- a new order of magnitude in corticosteroid effectiveness
- a new order of magnitude in margin of safety

A dramatic pattern of good to excellent improvement is reported with DECADRON in 90 percent of 153 patients† with acute, chronic and emphysematous bronchial asthma.

†Analysis of Clinical Reports.

MSD

MERCK SHARP & DOHME

DIVISION OF MERCK & CO , INC., PHILADELPHIA 1. PA.



MODERN THERAPEUTICS

New therapies and significant clinical investigations reported in other journals

Hepatojugular Reflux

The mechanism of the hepatojugular reflux was investigated in healthy people, in patients with cardiac failure, and in patients with emphysema. The prime object was to assess the value of the test as an early sign of cardiac failure.

During the test the intra-abdominal pressure rose, and the intrathoracic pressure either rose, remained steady, or fell. In most of the patients with emphysema the intrathoracic pressure rose.

The filling pressure (the algebraic sum of the intrathoracic and central venous pressures) rose in all the subjects, being highest in those with cardiac failure. The variation from the normal was quantitative rather than qualitative. The effect on central venous pressure was largely determined by the simultaneous change in intrathoracic pressure. Since this was unpredictable, it was concluded that observation of the jugular venous pressure while performing the test of hepatojugular reflux is unreliable as an early sign of cardiac failure. In emphysema the intrathoracic pressure response was more predictable and the jugular venous pressure could be expected to rise, but this does not necessarily indicate cardiac failure. The test is of value in identifying venous pulsations in the neck.

M. B. MATTHEWS and J. HAMPSON The Lancet, Vol. 1, No. 7026, Page 876, April 1958

Possible Exogenous Factors in the Causation of Lung Cancer

"This summary of existing knowledge of possible exogenous factors in the causation of lung cancer demonstrated the need for fuller chemical investigation of tobacco, tobacco smoke and town air."

SIR ERNEST KENNAWAY, M. D. and A. J. LINDSEY

British Medical Bulletin, May 1958

Respiratory Complications of Influenza

125 patients with respiratory complications of influenza were admitted to three Edinburgh hospitals during six weeks in Autumn, 1957.

Staph. pyogenes was commonly found, especially in patients with pneumonia and in all with fulminating pneumonia.

Respiratory obstruction developed in 9 patients, necessitating tracheotomy (which was life-saving) in 2.

Similar cases in future should be treated by a combination of penicillin and streptomycin until bacteriological studies indicate a specific drug. Bronchoscopy may be needed for respiratory obstruction, but tracheotomy is preferable to repeated bronchoscopy. The value of corticosteroids remains uncertain. Isolation of patients, where indicated, will reduce the risks of cross-infection.

DRS. W. C. WALKER, A. C. DOUGLAS, W. J. H. LECKIE, A. PINES, I. W. B. GRANT The Lancet, Vol. 1, No. 7018, Page 454, March 1958



THE ABBOTT VITAMINS YOU RECOMMEND?



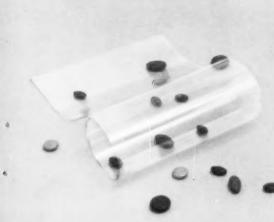
greater stability

Take Optilets*, for example. In a therapeutic formula multivitamin, of course, potency is all-important. The Filmtab coating operation is an anhydrous process. Because no moisture is sealed in the tablet (or used in the coating), deterioration is materially slowed . . . and the incompatibility existing between some vitamins in the presence of water is avoided. Thus, long-lasting potency.



smaller tablet

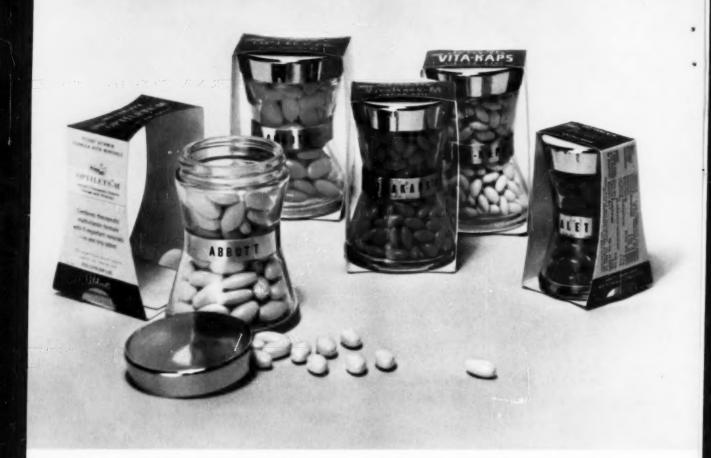
Because of the microscopic Filmtab coating, bulk is reduced. Pictured here, for instance, are Abbott's Dayalets* (red) and Dayalets-M* (green)—two potent maintenance formulas. See how tiny they are? Yet, Dayalets contain 10 important vitamins, and Dayalets-M offer a total of 19 vitamins and minerals!



no vitamin taste or odor

The "seal" with the Filmtab coating is complete. There is none of that vitamin odor-no vitamin taste or bitterness. And the Filmtab coating is sugar-free, thus, completely non-caloric. You'll find Filmtab only on Abbott nutritionals.

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 $Optilets ``.... the rapeutic formula \ multivitamins$

Optilets-M $^{\scriptscriptstyle{\mathrm{R}}}$ therapeutic formula multivitamins with minerals

Dayalets*..... potent maintenance formula multivitamins

in bottles of 250:

Vita-Kaps* economical multivitamins for the entire family

VitaKaps-M*..... multivitamins with minerals

in bottles of 60:

Sur-Bex* with C... Abbott's B-Complex with C

in the "apothecary" bottles (100 & 250)

Dayalets-M* potent maintenance formula multivitamins with minerals

And all come in the exclusive Filmtab* coating.



better home care, improved morale for your incontinent patients

Chux disposable underpads

Extra large Hospital Style $17\frac{1}{2}$ " x 24" and Large 13" x $17\frac{1}{2}$ "

Medicated and deodorizing (benzalkonium chloride) Disposable to make frequent bed changes much quicker, easier. Waterproof backing for complete bed protection.

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Complete protection for the ambulatory incontinent. Soft, long-wearing surgical-type gauze. Added center panel for maximum absorbency.

Both products available in drug and department stores everywhere.

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U.S. PAT. RE 24139
AND OTHER PAT. PEND.
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PROFESSIONAL PRODUCTS DIVISION Chicopee Mills, Inc., 47 Worth Street, N.Y.13, N.Y.

A Johnson Johnson Company

Myocardial and Cerebral Infarctions as Fostoperative Complications

A review of 30 patients who experienced cardiac or cerebral infarction during the 30 days following operation or accidental trauma suggests a biological difference between these two processes. Of the cardiac infarctions, 63% occurred during the operation or within the first three days after operation or injury. All but 23% occurred within the first week. To the contrary, the cerebrovascular accidents occurred without apparent predilection of time.

A period of hypotension was known to be associated with operation in 53% of the patients. Hypotension is known to result in a reduction in coronary flow. In the arteriosclerotic patient, whose coronary arteries are unable to dilate appreciably, the reduction in flow following hypotension is probably a major factor in the progression of ischaemia.

The complications could not be related to the anaesthetic agents used; indeed, eight followed the use of local analgesia. One patient received no anaesthesia (fractured humerus).

The increased oxygen requirements of the burdened heart, associated with the decreased coronary flow of hypotension, predispose it to an immediate oxygen deficiency. General anaesthesia reduces the oxygen demands of the brain so that an absolute oxygen deficit is as likely to be postoperative (atelectasis, narcotic respiratory depression, postural changes) as operative.

An urgent need is the rejection of the surgeon's concept that most of these complications are inevitable. Application and extension of the recognized principles of avoidance of anoxia, hypotension, and increased cardiac work in arteriosclerotic patients should prevent many of the myocardial infarctions. The biological and clinical factors underlying cerebrovascular accidents differ in not being specifically related to the period of trauma; attempted prevention necessitates the empirical application of such measures as adequate oxygenation, inhalation of carbon dioxide, and the avoidance of undue sedation in arteriosclerotic patients.

KEITH D. J. VOWLES, M.B., F.R.C.S. and JOHN M. HOWARD, M.D., F.A.C.S. British Medical Journal, May 1958, No. 5079, P. 1099

Oral Antidiabetic Compounds

On present evidence the hypoglycaemic effect of the oral antidiabetic drugs cannot be explained by interference with the endocrine balance of the organism.

Among the modes of action of these compounds inhibition of the output of glucose by the liver and enhancement of the uptake of glucose at the periphery seem to be acceptable. The detail of the changes in enzyme activities probably involved in the hepatic and peripheral effects have not been elucidated.

It is suggested that the hypoglycaemic effect of the oral antidiabetic compounds is determined not by the presence or absence of insulin but by the degree of diabetic aberration of metabolism.

DR. KNUD LUNDBRAEK, DR. KAI NIELSEN, and DR. OLE J. RAFAELSEN The Lancet, Vol. 1, No. 7029, Page 1038, May 1958

Continued on page 162a

MEDICAL TEASERS

Answer to puzzle on page 41a

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P	0	3	E		P	1	L	0	T		0	V	U	M
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N	E	S	T		0	0	P	E	0		B	L	E	8

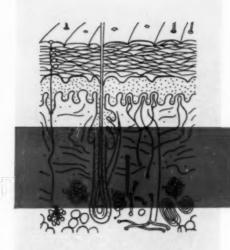
In 259 cases of skin and soft tissue infections treated with triacetyloleandomycin, investigators¹⁻⁸ report good or excellent results in 95.6 per cent. Infections included abscesses, furuncles, carbuncles, cellulitis, infected burns, pustular acne, pyodermas, and wound infections.

Other studies, as well as wide usage, have shown that CYCLAMYCIN is also prompt and reliable therapy for respiratory and urinary tract infections due to gram-positive pathogens. CYCLAMYCIN has often proved effective against staphylococci resistant to other antibiotics.

Available in both capsule and flavored liquid form, CYCLAMYCIN is convenient to administer, readily accepted by patients of all ages.

a most effective antibiotic for

skin and soft tissue infections





EXCELLENT RESULTS RESULTS

A "workhorse mycin" for common infections . . .

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TRIACETYLOLEANDOMYCIN, WYETH

SUPPLIED: Capsules, 125 mg. and 250 mg., vials of 36. Oral suspension, 125 mg. per 5-cc. teaspoonful, bottles

References: 1. Wennersten, J.R.: Antibiotic Med. 5:527 (Aug.) 1958. 2. Shubin, H., et al.: Antibiotics Annual 1957-1958, Medical Encyclopedia, Inc., pp. 679-684. 3. Olansky, S., and McCormick, G.E., Jr.: Antibiotics Annual 1958-1959, Medical Encyclopedia, Inc., pp. 265-267. 4. Isenberg, H., and Karelitz, S.: Noid., pp. 284-286. 5. Mellman, W.J., et al.: Noid., pp. 319-326. 6. Leming, B.H., Jr., et al.: Noid., pp. 418-424. 7. Hall, W.H., and Albright, J.: In Press, Antibiot. Med. & Clin. Therap. 8. McCrumb, F.R., Jr., and Snyder, M.J.: Personal Communication.

doctor, if you are not completely satisfied

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YOU ARE NOW USING:

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INEFFECTIVE
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PATIENTS

ARE LIMITED
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APPLICATION

PRODUCE Undestrable Side effects

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TOTAL "THERUHISTIN" FORTE

Sustained Action Tablet for daylong antiallergic effect

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Brand of Isothipendyl hydrochloride

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unique three-way antiallergic action isothipendy! hydrochloride "represents a new type of antihistammic drug, anticholinergic and antiserotonin agent...characterized by a high potency and efficiency" in the effective control of allergies.

unprecedented childed effectiveness. Sustained symptomatic relief was provided in an average of over 90 per cent of 1209 cases of various allergic diseases. In patients receiving daily desages comparable to these recommended for "THEFUNISTIN" FORTS, optimal relief was obtained in every instance.

wide clinical scope Total action "THERUHISTIN" FORTE has been used successfully in all varieties of allergic disorders, including bronchial asthma. Recent evidence has shown that in addition to histamine, serotonin is involved in some allergic responses and is probably a primary factor in allergic asthma. It has been observed that Isothipendyl hydrochloride produces "better results in bronchial asthma than other compounds probably because it is such an effective antiserotonin and anticholinergic agent as well as being an antihistaminic agent."

excellent toleration and safety Isothic endyl hydrochloride has been found to be "devoid of any acute or chronic toxicity" in clinical use. Spielman' has observed that a "most outstanding feature of this new antihistaminic agent is its lack of side effects as well as its great potency." A conspicuous tack of hypnotic or other side effects has been noticed even in dosages far beyond those normally recommended (as much as 180 mg. dally for several weeks has been given in multiple food allergy)."

Also available: "THERUHISTIN" Syrup. Potency recently increased from 2 to 4 mg. per 5 cc. (1 tsp.). Usual dosage for children: ½ to 1 tsp. two to four times daily depending on age,

AYERST LABORATORIES
New York 16, N. Y.
Montreal, Canada

Usual Dosage: One tablet morning and evening,

Supplied: No. 737 – 24 mg. Sustained Action Tablets, bottles of 100 and 1,000.

Committee on New and Unused Therapeutics, Am. Coll. Allergists: Ann. Allergy 16:237 (May-June) 1958.
 Spielman, A. D.; Ann. Allergy 16:242 (May-June) 1958.
 Spielman, A. D.; New York J. Med. 57:3329 (Oct. 15) 1957.
 Ungar, G., and Hayashi, H.; Ann. Allergy 16:542 (Sept.-Oct.) 1958.
 Page, I. H.; Physiol. Rev. 38:277 (Apr.) 1958.

Obstetric Use of Fluothane

A new halogenated hydrocarbon compound, Fluothane, has recently become available whose anesthetic properties appear to make it a desirable anesthetic for use in obstetric cases. The liquid is noninflammable, does not decompose when in contact with soda lime, can be used in a semiclosed or closed absorption system, and in an open-drop technique. The authors employed the agent for vaginal deliveries and for cesarean sections. There were 41 normal deliveries and 27 cesarean sections. During induction, two signs were followed closely-blood pressure and pulse rate; if a drop or slowing occurred, administration of the Fluothane was interrupted. The effect of the Fluothane on the gravid uterus at term was observed closely in the cesarean sections; in 18 instances an atonic uterus was apparent. From the pharma-

cology and the mode of action of Fluothane, it might be expected to be comparable to the action of chloroform on the uterus. The latter, while ideal for producing uterine relaxation, has been condemned for its toxic effects on the myocardium and liver: however, no damage to the liver has been observed with the use of Fluothane. Other investigators have mentioned instances of excessive uterine relaxation in some vaginal deliveries, and also cases of excessive bleeding. The authors are aware of these conditions, and believe that Fluothane should be pregnancy seems to be a factor in the effect administered with care. The duration of the of Fluothane on the gravid uterus, and also the length of time that the agent is administered.

> CHALOM A. ALBERT, M.D., ET AL. Obstetrics and Gynecology, March 1959 Continued on page 166a



two prenatal supplements especially for multiparas The incidence of anemia primigravidas multiparas is greater in multiparas'

to meet her greater needs for diet supplementation

Natalins Comprehensive Natalins Basic

both extra generous in iron, ascorbic acid and calcium

In a study1 of over a thousand obstetrical patients, anemia was found to occur with 50% greater frequency in multiparas than in primigravidas. And it was found that anemia often indicates other nutritional deficiencies as well . . . Natalins Comprehensive tablets supply 12 vitamins and minerals and Natalins Basic tablets

supply 4 vitamins and minerals . . . both are formulated to meet the special needs of multiparas by supplying generous amounts of elemental iron (40 mg. per tablet), ascorbic acid (100 mg. per tablet) and calcium (250 mg. per tablet).

Convenient, one-a-day tablet dosage.



Sinutab really resolves sinus or frontal headache

In Texas: 'Good relief in 7 out of 8 sinus headaches. Good relief in 15 out of 20 patients suffering from sinus and certain other types of headaches.' Hospital O.P. D.; 'Tried Sinutab last week-all five patients responded very favorably to Sinutab.' In Indiana: 'Nothing relieved pressure and throbbing until Sinutab.' In Washington, D. C.: 'I used Sinutab on my toughest cases. These (sinus headache) patients are calling in about the dramatic results....' In Buffalo: '...very enthused about Sinutab...put some patients and wife on Sinutab and had excellent results.' In Syracuse: 'She (patient) called me to say the new tablets gave her the first real relief from sinus headache.... In the State of Washington: 'Doctor's Nurse volunteered Sinutab relieves her headache quickly, the first relief in years.' In Internal Medicine...in Denver, Colorado: 'My patient had his first sinus relief with Sinutab 'In Indiana: 'Sinutab has proved to be very effective and I have gotten wonderful results in all but one patient.' In Wisconsin: '... A local woman has had sinus trouble for about 15 years...tried everything...tried Sinutab and now the woman is comfortable....'

These clinical impressions were received from physicians throughout the nation on Sinutab, our effective new sinus and frontal headache preparation.

These candid quotes are only a few of many, but they confirm the rapid and widespread acceptance of Sinutab as a truly effective, well-tolerated therapy. Please note that much of the success of Sinutab has been with patients unresponsive to other therapies.

Joseph M. While

Joseph M. White, M.D. Warner-Chilcott Laboratories

With a single prescription, Sinutab aborts pain, decongests, relieves pressure and provides mild tranquilizing action to relax the patient. Prescribe Sinutab for your patients with sinus or frontal headache.

nosact: Adults: two tablets every four hours: prophylactically one tablet every four hours. Children 6 to 12 years: onehalf adult dose, stretche: Bottles of 30 tablets, shit an formulation's N-acctyl-para-aminophenol (APAP), L50 mg., (22's gr.); Phenylpropanolamine IICL 25 mg., (% gr.); Phenylpropanolamine IICL Dhydrogen Citrate, 22 mg. (°s gr.).



Evaluation of a New Diuretic

Hydrochlorothiazide is the newest member of the family of benzothiadiazines of which chlorothiazide was the first to appear. The latter has been clinically evaluated with gratifying results in the management of various edematous states, and as an adjunct in the therapy of hypertension. The author was interested in the clinical pharmacology of hydrochlorothiazide in terms of its potency as a diuretic agent. The drug was administered to patients with edema of varied etiology in a dose of 25 mg. daily for 21 days. The patients' conditions included cardiac edema, nephrotic edema, edema induced by steroid therapy, one cirrhotic with mild edema and moderate ascites, and five women in the third trimester of pregnancy. The greatest loss of weight was observed in the patients with nephrotic edema and cirrhotic edema. Significant changes occurred in the patients with cardiac edema, edema induced by steroid

therapy, and edema resulting from pregnancy. It appears that hydrochlorothiazide is a potent saluretic agent that resembles chlorothiazide qualitatively but is several times more active. An orally effective agent, it is more potent than the usual maximal dosages of parenterally administered organo-mercurial diuretics. The absence of the development of tolerance to the drug is of definite benefit. When hydrochlorothiazide is made the sole therapeutic agent in the treatment of mild hypertension there is a significant decline of the blood pressure at the end of the third week. It is also of value in augmenting the antihypertensive effects of Rauwolfia and ganglionic blocking agents. As a potent diuretic agent, it appears to be safer than currently available drugs according to this report.

RALPH V. FORD, M.D.
Southern Medical Journal, January 1959
Continued on page 168a



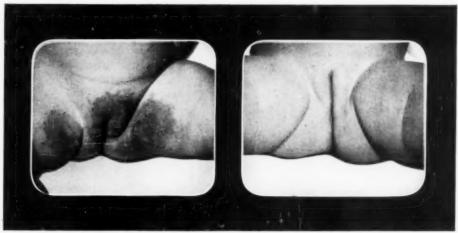
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CAPSULES-14 VITAMINS-11 MINERALS

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Before application of White's Vitamin A & D Ointment—Typical diaper rash with excoriation of skin.

After application of White's Vitamin A & D Ointment at every diaper change—Diaper rash has completely disappeared within one week.

Heal and Prevent Diaper Rash with White's Vitamin A&D Ointment Apply at Every Diaper Change HEALS • SOOTHES • PROTECTS

also beneficial for—Pressure Sores, Varicose and Chronic Ulcers; Nipple Care (fissured nipple); Episiotomy and Circumcision Wounds; Eczema, Detergent Dermatitis; Minor Burns and Wounds and Skin Abrasions.

Supplied in 11/2 and 4 oz. tubes; 1 lb. "nursery" jars and 5 lb. "ward" containers.

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while she is planning her family,

she needs your help more than ever



the most widely prescribed contraceptive
WHENEVER A DIAPHRAGM IS INDICATED



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Perphenazine for Mentally Disturbed Patients

Perphenazine, a chlorphenothiazine derivative, was used to evaluate its efficacy in 100 patients in the Danvers State Hospital, Hathorne, Massachusetts. Seventy-five of the patients had been in the state hospital for periods of more than two years, the others had been there for shorter periods. Seventy-one of the patients were schizophrenics; 16 were mentally deficient and psychotic; eight had a chronic brain syndrome; three had manicdepressive psychosis, and two, involutional psychosis. Twenty-five members of the chronic group are presently taking the drug after a period of six months. In the majority of patients, the initial dosage varied between 32 and 64 mg.; the maintenance dose averaged 29 mg. While, in a number of the patients in both groups, the perphenazine had to be discontinued because parkinsonian symptoms became evident, several others were able to leave the hospital, or to return to convalescent or open wards. Mepazine was added to the perphenazine for ten patients in order to enhance the clinical effectiveness by the use of a synergistic combination which produces fewer side-effects and more beneficial results than either drug used alone. According to the author's summation:

- (1) Observation of 100 cases in which perphenazine was used show it to be an effective ataractic, one of three phenothiazines that does not cause agranulocytosis.
- (2) It is particularly advantageous in that it does not produce great flattening of effect.
- (3) It produces less depression and agitation than other sympathicolytic ataractics used.
- (4) Perphenazine works well synergistically used with mepazine, and the combination does not tend to produce stuporousness or lethargy in combination.
 - (5) Comparatively low doses are effective.

HARRY F. DARLING, M.D. Diseases of the Nervous System, October 1958 Continued on page 170a

MEDICAL TIMES



from pollen onset to

 $\dots a \ symptom$ -

with

METRETON

NASAL SPRAY TABLETS

METRETON TABLETS

with stress-supportive vitamin C for systemic therapy intensive enough even in resistant allergies.

METRETON® Tablets, bottles of 30 and 100.

Each METRETON Tablet contains 2.5 mg. prednisone, 2 mg. chlorprophenpyridamine maleate, and 75 mg. ascorbic acid.

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first "killing" frost

controlled summer

Hay fever patients and others with resistant summer allergies obtain superior relief from combined "Meti" steroid-antihistaminic action.

METRETON NASAL SPRAY

for rapid, sustained relief from allergic nasal symptoms without sympathomimetic or vasoconstrictor side effects.

METRETON Nasal Spray, 15 cc. squeeze bottle.

Each cc. of MEIBEION Nasal Spray contains 2 mg, (0.2%) prednisolone acetate and 3 mg, (0.3%) chlorprophenpyridamine gluconate. Meti, 8 brand of corticosteroids.



The Debilitated Child

"Apart from obvious disease the commonest causes of debility in childhood are:

- Poor diet and environment, associated with unsatisfactory hygiene and often the result of maternal ignorance or backwardness.
- (2) Low-grade infection, especially recurrent upper respiratory infections and skin sepsis.
- (3) Emotional deprivation from lack of normal affection.

As a separate problem there are many children whose parents believe them to be debilitated because they are incorrectly thought to be too thin. This is due to parental ignorance of a child's normal growth pattern and in particular to the fact that children, especially boys, between seven and ten years are normally skinny."

HUGH JOLLY The Practitioner, April 1958

Gantrimycin Effective Combined Therapy of Urinary Infections

"The results of a pilot study in the therapy of urinary tract infections with gantrimycin, a combined drug consisting of gantrisin and oleandomycin, are presented. An excellent response to therapy in a wide variety of urinary infections was obtained in 52 percent of 63 patients studied. Laboratory determinations of organism sensitivity, and blood, serum and urine levels of gantrisin and oleandomycin were accomplished. Synergism between gantrisin and oleandomycin is suggested by this study, though further study is indicated. It is felt that gantrimycin offers effective therapy in selected cases of urinary infection, particularly those involving the gram-positive micro-organisms."

JAMES H. SEMANS and JAMES F. GLENN The Journal of Urology, June, 1958

Continued on page 172a



Today she would prefer

TRICHOTINE®

for her most personal cleansing

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help prepare your patients

for a healthy, active later life

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each KAPSEAL contains:

itamins A 1,667 Units (0.5 mg.) dramin B. 10.67 mg. 33.3 mg. 16.7 mg. 16.7

(as the sodium sait) 5 mg.
minerals
Ferrous sulfate (exsiccated)
Iodine (as potassium iodide)
Calcium carbonate
Galcium carbonate
Gef. 7 mg.
Gigestive enzymes
Taka-Diastase®
Pancreatin
133.3 mg.

protein improvement factors I-Lysine monohydrochloride 66.7 mi dl-Methionine 16.7 mi

dl-Methianine 16.7 mg.
gonadal hormones
Methyl testosterone 1.67 mg.
Therlin 0.187 mg.
dosage One Kapacal three times daily before
meals. Female patients should follow such
21-day course with a 7-day rest interval.
packaging: ELDEC Kapacals are available in
bottles of 100.

PARKE, DAVIS & COMPANY, Detroit 32, Michigan

Pruritic Conditions Treated with Trimeprazine

Pruritic conditions, according to the authors, being of many types are extremely difficult to treat. Antihistamine and vasodilator agents afford only partial or transient relief in certain types of pruritus. Also, colloid baths as well as topical lotions and ointments are inconvenient to use and unreliable. An ideal antipruritic, they claim, should act rapidly, be easy to administer, and be effective regardless of the cause of the pruritus; it should be free of sideeffects. Trimeprazine (Temaril), a new phenothiazine derivative possessing central depressant, antihistaminic, and antiserotonin activity is believed to produce clinical results that represent a significant advance in this type of therapy. During an eight-month period, 215 private patients were treated with Temaril for moderate to severe pruritus associated with a number of

types of active and chronic skin diseases. The average oral dosage ranged from 2.5 mg. to 10 mg. daily, and the average length of treatment was one to two weeks. Specific therapy was used to control the cutaneous disorder when necessary, but no other antipruritic agents were employed. Control of itching almost always occurred within an hour after the first dose of trimeprazine, and was maintained by subsequent doses. Results of therapy were considered excellent in 20 percent of the patients, good in 51 percent, and fair in 15 percent. In the three diagnostic categories most frequently encountered, i.e., neurodermatitis, contact dermatitis, and eczematous eruptions, the authors report the results as good or excellent in more than 70 percent of each class. Side-effects were mild and infrequent, drowsiness being most often reported. The report concludes that results, on the whole, were superior to those obtained

Continued on page 178a

YOUR concepts of cleansing have changed...

Detergents are the modern, efficient way of cleansing. They provide greater surface activity and assure effective penetration.

Trichotine is the modern detergent vaginal douche. Unlike vinegar or low pH douches, Trichotine cuts through viscid leukorrheal discharge and allows complete penetration of its healing and soothing ingredients. Trichotine is bactericidal and promotes epithelization. It offers quick relief from pruritus, and its refreshing, soothing action is reassuring even to your most fastidious patients.

in vaginitis—vulvovaginitis—cervicitis—pruritus vulvae postcoital and postmenstrual hygienic irrigation



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Antibiotics

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- That are seldom used systemically



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CORTISPORIN*®

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brand Polymyxin B Sulfate

10,000 Units

Neomycin Sulfate...5 mg.

Hydrocortisone...(1%)10 mg.

Hydrocortisone...(1%) in a special water-miscible lotion base. Plastic squeeze bottles of 10 cc.



'NEOSPORIN'®

Antibiotic Lotion

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Each cc. contains:

"Aerosporin" brand Polymykin & Sulfate
10,000 Units
Neomycin Sulfate...5 mg.
in a special
water-miscible lotion
base. Plastic squeeze
bottles of 20 cc.

The assurance of proven formulas—
"Cosmetically acceptable"
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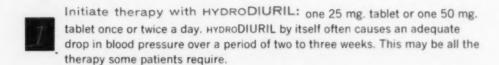
simplifies* and improves any regimen for hypertension

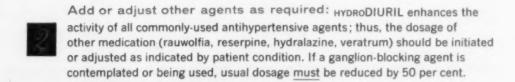


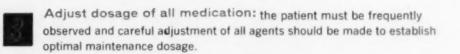
*it's as easy as 1, 2, 3 to use

HYDRODIURIL

(HYDROCHLOROTHIAZIDE)







Supplied: 25 mg, and 50 mg scored tablets HYDRODIURIL (Hydrochlorothiazide) bottles of 100 and 1,000

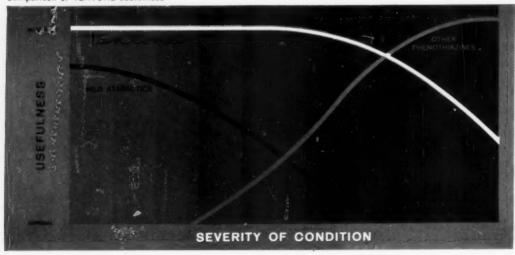
Additional literature for the physician is available on request

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new...highly effective tranquilizer

Comparison of TENTONE usefulness



... for extended office practice use



NEW PHENOTHIAZINE COMPOUND FOR THE LOWER AND MIDDLE RANGE OF DISORDERS

Positive, rapid calming effect in mild and moderate cases.

Striking freedom from organic toxicity, intolerance, or sensitivity reaction—particularly at low dosage.

Greater freedom from toxicity intolerance, or sensitivity reaction—particularly at low dosage.

Greater freedom from toxicity from induced depression or drug habituation.

May be useful, as with other tranquilizers, so potentiate action of analgesus sedatives, narcotics.

Facilitates management of surgical, obstetric, and other hospitalized patients.

Indicated when more than a mild sedative effect is desired, and less than psychusis is involved.

Desage rapige. In mild to mederate cases from 30 to 100 mg. daily. In moderate to severe cases from 75 to 500 mg. daily.

LEDERLE LABORATORIES: a Division of American

CYANAMID COMPANY, Poarl River, New York

50 mg. tablets

by other forms of therapy, and the authors' observations substantiated other reports regarding the safety of the drug.

CHARLES S. LINCOLN, JR., M.D., ET AL.

California Medicine. February 1959

Asian and Other Influenza Antibodies in the Human Population

"Samples of serum collected from 285 persons one to ninety-five years of age before the Asian-influenza pandemic were assayed for presence and amount of hemagglutination-inhibitory antibody against prototype influenza strains that represent the swine, PR8, A' and Asian families of influenza A, the FMI, Scandinavian '53 and Dutch '56 subgroups of Influenza A' and the Lee, Bon and Great Lakes '54 families of influenza B. The distribution of antibody against these viruses was oriented in the various age groups to the particular family

of virus that was predominant during the early life of the donors. The high level of antibody against swine and PR8 families and against the FMI and Scandinavian '53 subgroups of A' was consistent with the nonexistence or nonoccurrence of these forms in the human population during the contemporary period. The antibody level against the Dutch '56 subgroup was so low as to suggest that it, along with Asian influenza, will continue to cause significant illness in the future. The level of antibody against all 3 families of influenza B, including the contemporary strain, were so great as to suggest only sporadic illness or occurrence in small epidemics of influenza B in the near future. There was a striking deficiency of antibody against Asian influenza virus in the serums. However, apparent antibody in very low level was present in serums from persons from more than forty years of age. This seems to have resulted more from experience with a wide



composite of influenza antigens, some of which are present in the Asian virus, than from prior infection with the Asian virus itself. The significance of the findings is discussed in detail."

MAURICE R. HILLEMAN, Ph. D., CAPTAIN FREDERICK J. FLATLEY, M. C., A. U. S., SALLY A. ANDERSON, B. S., MARY L. LUECKING, B. S. and DORIS J. LEVINSON, B. S.

The New England Journal of Medicine, May 1958

Autoimmunisation in Subacute Thyroiditis

"A case of subacute thyroiditis is described which apparently complicated primary thyrotoxicosis.

A positive haemagglutination-inhibition test for mumps-virus antibody in a high titre during the acute stage and decreasing later suggested that the thyroiditis was due to mumps virus.

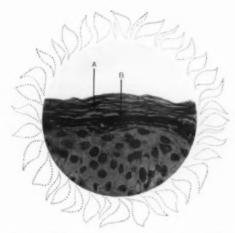
Autoimmunisation to "purified" human thyroglobulin took place after the acute stage and reached a peak 3 months later, after which the amount of circulating antibody gradually decreased."

> DR. D. FELIX-DAVES The Lancet. April 1958

Prochlorperazine in the Treatment of Mentally Defective Children

Emotionally disturbed, mentally defective children present one of the greatest challenges to treatment. Defects of intelligence existing since birth, or caused by organic brain damage often are complicated by emotional disturbances which nullify or prevent the rudimentary training and education attempted with these patients. To meet the problems presented by these mental defectives, the author found various tranquilizers useful in controlling destructiveness, hyperactivity and similar symptoms. Tranquilizing drugs are constantly being evaluated, and one which appeared to the author to offer marked promise was prochlorperazine. This drug was administered to 82 emotionally disturbed mental defectives. 70 of whom were under 21 years of age. The emotional disturbances and the mental defici-

Concluded on page 182a



when sunburning must be prevented

OXSORALEN

brand of methoxsalen, Elder

- · increases tolerance
- · increases tanning

Light-complected persons, to whom overexposure to the sun is a serious health problem, may be protected by the oral administration of OXSOMLEN in combination with measured periods of exposure to sunlight for 14 days, after which the skin is resistant.

OXSORALEN plus sunlight increases the density and thickness of the stratum corneum (A) and results in the development of a stratum lucidum (B) immediately beneath it. The barrier thus formed is of aid in protecting against ultraviolet radiation and prevents burning, blistering, and peeling. And as pigment granules ascend to the surface they are trapped by the compact, thickened layers, are not shed by peeling, and the skin takes on an accentuated suntanned appearance.

Write for comprehensive literature and patient instruction forms. Also consult Physicians' Desk Reference, page 668.

ELDER

PAUL B. ELDER COMPANY Bryan, Ohio

Lerner, A. B.: Pu

If Suntanning thrus,
Invest. Dermat. 25.
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Invest. Dermat. 25.
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A.M.A. 167: 1586-1589, (Inulaberger, M. B., and Lerner,
Inutanning, Potentiation, with Ordedication. J.A.M.A. 167: 2077, 19.
Recker, S. W. Jr.: Effects of 8-Methods.

Method Skin Pig

itzpatric

iladelphia

Becker, S. W., Jr.: Effects of 8-Methox Light in Human Skin. Science, 127:878, Daniels, F., Jr., Hopkins, C. E., and Fitzpatn (8-Methoxysoralen) on Suphura and Suntas

With Singoserp this patient's blood pressure was controlled for the first time without side effects

FROM THE FILES OF A PHILADELPHIA CARDIOLOGIST. PHOTOS USED WITH PERMISSION OF THE PATIENT.

Tombstone salesman had known hypertension for 16 years; rejected by U.S. Army because of high blood pressure. Whole root rauwolfia lowered pressure satisfactorily, but patient could not tolerate side effects.

History of this patient in chart form:

Singoserp in a dosage of 0.5 mg, daily lowered his blood pressure to 130/80, produced no side effects. Patient feels well, works well, speaks of marked improvement in outlook and function.



Clinical findings in 900 patients show the selective antihypertensive action of Singoserp

IN 735 PATIENTS, BLOOD PRESSURE FELL AN AVERAGE OF 30.7 mm. Hg:

- more than half of these patients suffered from moderate to severe hypertension
- more than half of the cases involved hypertension of at least 6 years' standing, with many histories of up to 20 years' duration

THE SIDE-EFFECTS PROBLEM WAS MINIMIZED IN MOST FATIENTS:

Chart shows gratifyingly low incidence of side effects in 233 patients given Singoserp with no other antihypertensive medication

(8)	Remem	ASIL	1
	for the		

Side Effect	Number	Per Cent
Lethargy	7	2.9
Headache	6	2.5
Gastrointestinal upset	3	1.2
Vertigo	2	0.8
Nasal congestion	1	0.4

DOSAGE:

In new patients: Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from $\frac{1}{2}$ to 3 tablets (0.5 to 3 mg.) daily.

In patients taking other antihypertensive medication: Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

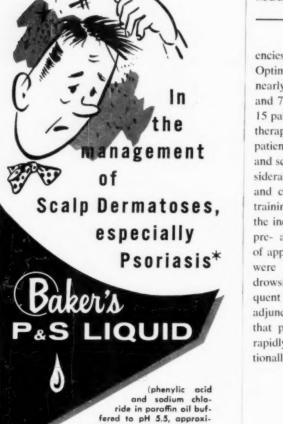


z/zasawa



a major improvement in rauwolfia

a major advance in antihypertensive therapy



mately that of normal skin

NON-IRRITATING NON-SENSITIZING

tissue.)

Controls lesions rapidly . . . reduces erythema and scaling . . . relieves itching. Does not stain . . . leaves no odor . . . is easily washed out with water.

* Sulzberger, M. B. and Obadia, J., Arch. Derm., 73:373 (April) 1956

Stocked by leading wholesalers.

M
m

encies were moderate or severe in all patients. Optimum daily dosage of prochlorperazine for nearly half of the patients was between 30 and 75 mg.; 22 patients required 150 mg., and 15 patients needed 300 or 600 mg. Response to therapy was excellent or good in all but one patient. Hyperactivity was effectively reduced, and schizophrenic reactions were relieved. Considerable improvement was obtained in ward and cottage behavior and in table and toilet training. Prochlorperazine appeared to reduce the incidence and severity of epileptic seizures, pre- and post-seizure tension, and the dread of approaching seizures. No serious side-effects were observed. Extrapyramidal symptoms, drowsiness, and catatonic-like state were infrequent and transient, or were overcome by adjunctive medication. The report further states that prochlorperazine is a generally effective, rapidly acting, safe medication for the emotionally disturbed mental defective.

C. H. CARTER, M.D. Southern Medical Journal, February 1959

Action of Citrate and Oxalacetate on Dietary and Diabetic Ketosis

"The results show that dietary ketonuria is practically abolished by intraperitoneal injection of either citrate or oxalacetate.

Diabetic ketosis, on the other hand, is not significantly influenced either by citrate or by oxalacetate injected intravenously.

The discrepancy between the results obtained in diabetic and in dietary ketosis suggests that the pathogenic mechanisms responsible for these two conditions are fundamentally different.

Diabetic ketosis may not be attributable, as dietary ketosis is, to a deficiency of oxalacetate or of citrate but rather, according to Beatty and West (1955), to a disturbance in the Krebs cycle."

PAOLO FASELLA, CORRADO BAGLIONI, CARLO TURANO and NORIS SILIPRANDI Lancet, 1:1097, May 1958 The patient with gastrointestinal dysfunction often finds the printed page blurred like this, because of the side effects of some antispasmodics. He may be so disturbed that he abandons treatment. But you can provide safe, effective relief of pain and spasm without risk of blurred vision with...



direct antispasmodic action plus control of anxiety and tension without blurred vision, dry mouth or loginess associated with barbiturates, belladonna and bromides.

now two forms for adjustable dosage

MILPATH-400—Each yellow, scored tablet contains meprobamate
400 mg. and tridihexethyl chloride 25 mg. Bottle of 50.

DOSAGE—I tablet t.i.d. at mealtime and 2 at bedtime.

MILPATH-200—Each yellow, coated tablet contains meprobamate
200 mg. and tridihexethyl chloride 25 mg. Bottle of 50.

DOSAGE—I or 2 tablets t.i.d. at mealtime and 2 at bedtime.



WALLACE LABORATORIES New Brunswick, N. J.

"nutrition... present as a modifying or complicating factor in nearly every illness or disease state" 1

the rationale for

in

cardiac disease



"B vitamins should be an integral part of the treatment prescribed for any patient with cardiac disease.... As a consequence of special low salt diets and diuretics prescribed to

release the water held in the body fluids by an excess of sodium, the B vitamins are 'washed out' of the body with the salt, and the difficulties of the disease are compounded."²

in

infectious disease



"There are ample, critical, statistically significant studies to indicate that good nutrition is important for optimal resistance to infection, for a superior tissue capability to cope with

disease and injury, and for maximum antibody formation."5

"Fever also increases vitamin requirements. This is especially true of the B-complex and C vitamins. Liquid and soft diets, which are commonly prescribed early in disease, are inadequate in these vitamins. It is advisable to give supplementary vitamin capsules during the actual illness and convalescence." 6

Each Theragran supplies:

Vitamin	1						9	5,0	00	U.S	i.P. units
Vitamin											
Thiamin	e N	lon	ОП	iti	ate		9			0	10 mg.
Riboflavi	183										10 mg.
Niacinan	rid	e								0	100 mg.
Ascorbic	Ac	id									200 mg.
Pyridoxi	ne	Hy	dre	n.l	los	id	e				5 mg.
Calcium	Par	nto	the	ena	ne						20 mg.
Vitamin	B,2	Ac	tiv	ity	Co	1110	en	tra	te		5 mcg.
Dusage:	1	OF I	me	re	da	ilv	as	ine	lic	ate	d.

Supply: Family Packs of 180. Bottles of 30, 60, 100 and 1,000.

THERAGRAN with Minerals available as THERAGRAN-M

bottles of 30, 60, 100 and 1,000 capsule-shaped tablets and Family Packs of 180.

Also available: Theragran Liquid, bottles of 4 ounces; Theragran Junior, bottles of 30 and 100.

References: 1, Youmans, J. B.: Am. J. Med. 25:659, Nov. 1958. 2. Gertler, M. M.: Paper presented at Conference on Metabolic Factors in Cardiac Contractifity, N. Y. Acad. Sciences, New York City, N. Y., March 18-19, 1958. 3. Fernandy-Herlihy, L.: Lahey Clinic Bull. 11:12, July-Sept. 1958, 4. Spies, T. D.: J.A.M.A. 167:675, June 7, 1958. 5. Halpern, S. L.: Ann. N. Y. Acad. Sci. 5:147, Oct. 28, 1955. 6. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 54. 7. Kountz, W. B.: Mod. Med. 25:102, Aug. 1, 1957. 8. Sebrell, W. H.: Am. J. Med. 25:675, Nov. 1958.

the use of vitamins

in rheumatoid arthritis



"It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis [collagen disease] simply to insure nutritional adequacy..."8

'Many rheumatologists now look for nutritive failure among the patients who have arthritis and other debilitating diseases."4

in degenerative disease



"Most degenerative disease changes are believed to be related to disturbed nutrition. ... Even though blood levels may be adequate [for vitamin A, vitamin D, thiamine, ascor-

bic acid, and riboflavin]...many individuals will improve with supplementary administration."7 "In chronic diseases . . . in which there is a loss of appetite, difficulty in eating or abnormal metabolic demand, symptoms of B vitamin deficiencies also have been found frequently and should always be looked for in their management."8

for the next patient you see who needs nutritional support

Theragran



Squibb Quality - the Priceless Ingredient

Theragran a is a Squibb trademark.



NEWS AND NOTES

Selected items of current interest from the fields of medical research and education

Crash Diets for Athletes Termed Dangerous

Crash diets and drying out by high school wrestlers and boxers trying to make a certain weight class are to be condemned, according to the American Medical Association's Committee on Injury in Sports.

In a statement in the A.M.A. News, the committee, along with the National Federation of State High School Athletic Associations, called for an unannounced "weighing in" at the beginning of the season. A boy should remain

throughout the season in the class established for him at the "weighing in."

The groups also suggested an increased number of weight classes for athletes to minimize the advantage of making a certain class.

Many schools have interscholastic wrestling, but only two states (Idaho and Oregon) permit interscholastic boxing in high school, the statement said.

Boys going on crash diets several times a year to make weight classes led to the statement.

"Under the strong motivation and appeal Continued on page 188a

GLUKOR effective in 85% of cases. Glukor may be used regardless of age and/or pathology . . . without side

IMPOTENCE



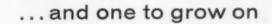
The original synergistically fortified chorionic gonadotropin. Dose 1 cc 1M—Supplied 10 & 25 cc vials, 1. Gould. W. L.: Impotence, M. Times 84:302 Mar. 'S6. 2. Personal Communications from 110 Physicians. 3. Milhoan, A. W., Tri-State Med. Jour., Apr. 'S8.

Reg. U. S. Pat. Off. Pat. Pend. @ 1959

effects . . . effective in men in IMPOTENCE, premature fatigue and aging. GLUTEST for women in FRIGIDITY and fatigue.

Lit. available.

Research upplies
Pine Station, Albany, N. Y.



A tiny tablet of REDISOL to stimulate the appetite — to help in the intake of food for growth.

REDISOL is crystalline vitamin \mathbf{B}_{12} , an essential vitamin for growth and the fundamental metabolic processes.

Ideal for the growing child, the REDISOL tablet dissolves instantly on contact in the mouth, on food or in liquids.

Packaged in bottles hermetically sealed to keep the moisture out and to retain vitamin potency in 25 and 50 mcg. strengths, bottles of 36 and 100 — in 100 mcg. strength, bottles of 36, and in 250 mcg. strength, vials of 12.

Also available as a pleasant-tasting cherry-flavored elixir (5 mcg. per 5-cc. teaspoonful) and as REDISOL injectable, cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

REDISOL

cvanocobalamin, Crystalline Vitamin Ben



MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

REDISOL IS A TRADEMARK OF MERCH & CO., INC.

of sports, the diets and drying out may be carried to great extremes," the two groups said. "Such efforts are not consistent with the spirit of the sport in that they tend to defeat regulations designed to insure fair and equitable competitions."

The crash diets, "sometimes approaching the starvation level," also are condemned from a health standpoint. "Disturbing the fluid balance of the body by drying out holds serious health hazards," the groups continued.

"These dangers are intensified in the immature organism of the growing adolescent athlete. They are also intensified by periodic weighings which encourage the athlete to resort to such practices at frequent intervals during the season," they said.

Under the present system in which crash diets are used, an athlete may be competing in a class below that in which he rightfully belongs, or a boy competing in his proper class may be pitted against much heavier boys who "made" the weight below their real class.

No plans of classification of athletes is infallible, the groups said, but they believe their recommendations "provide the best guarantee of equitable competition with a healthful experience for the participants."

Gift Toward University Hospital

The James Foundation of New York has made a gift of \$110,000 to New York University-Bellevue Medical Center toward the construction of a 19-story, 600-bed University Hospital on the Center's campus. Contributions totaling \$250,000 have been made by the James Foundation to the Medical Center since it began its development program in 1948. The current gift will release a similar amount of money from the Samuel H. Kress

Continued on page 190a



he deserves

CAPSULES-14 VITAMINS-11 MINERALS

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



three essential steps
help overweight patients
eat to live,
not live to eat







supervision by the physician

a balanced eating plan

supportive medication

Obedrin

and the 60-10-70 Basic Plan

provide an effective weight control regimen

Frequently a patient loses weight while on a special diet, then soon gains it back again. Obedrin is a valuable aid to this type of patient. It curbs unhealthy food craving while the patient establishes correct eating habits. Thus he becomes able to maintain optimum weight. Each capsule or lablet provides:

Semoxydrine $^{\rm H}$ HC1 (methamphetamine HC1), 5 mg., for its anorexigenic and mood-lifting effects

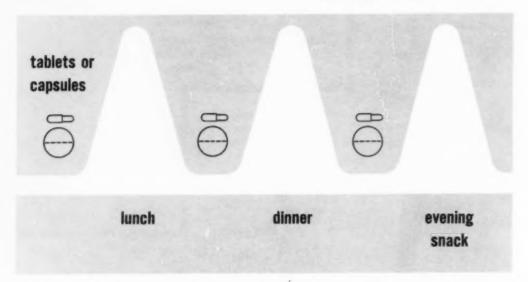
Pentobarbital, 20 mg., to guard against excitation

Thiamine Mononitrate, 0.5 mg., Riboflavin, 1 mg. and Nicotinic Acid (Niacin), 5 mg., to supplement the diet Ascorbic Acid, 100 mg., to help mobilize tissue fluids

Bristol, Tennessee · New York · Kansas' City · San Francisco THE S. E. ASSENGILL COMPANY

for dependable control of appetite

... a flexible dosage form



The Obedrin formula permits a flexible dosage schedule which depresses the appetite when it is most important to do so—at peak hunger periods. The physician can adjust the dosage to fit each patient's need.

Obedrin

and the 60-10-70 Basic Plan

advantages of Obedrin

A dependable anorexigenic agent

A flexible dosage form

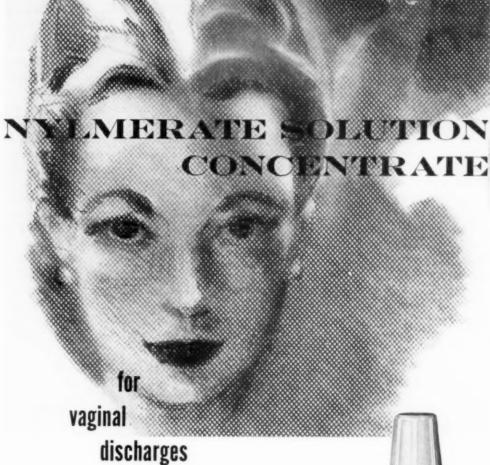
Minimal central nervous stimulation

Vitamins to supplement the diet

No hazards of impaction

Write for 60-10-70 menus, weight charts, and samples of Obedrin. Used with the 60-10-70 Basic Plan, Obedrin offers an ideal weight-control regimen for the overweight patient.

Bristol, Tennessee • New York • Kansas City • San Francisco THE S. E. ASSENGILL COMPANY



Nylmerate Solution Concentrate as a vaginal douche helps prevent recurrences of vaginal discharges, acts as an effective prophylaxis.

As a concomitant measure -

NYLMERATE IMPROVED JELLY

- · Positive Trichomonacidal and Monilicidal action
- Symbiotic organisms eradicated by its bactericidal potency
- Low surface tension allows for deep epithelial cell penetration
- · Re-establishes normal vaginal
- flora and prevents recurrences Simple to use...morning and night applications, including treatment during menstrual period

Prescribe: "Nylmerate Jelly with applicator" 3 oz. and 5 oz. tubes

- · Available only on your prescription (eliminates possibility of excessive or unwarranted vaginal douching)
- · Therapeutic (Bactericidal and trichomonacidal)
- · Acidic (4.1 pH in dilution)
- Reaches innermost recesses via low surface tension
- · Soothing
- . Use . . . twice daily (1 capfull to 2 quarts water) prior to inser-

tion of medication · Economical Specify pint bottles with measuring cap (Nylmerate: A brand of phenylmercuric acetate)



HOLLAND-RANTOS CO., INC. . 145 HUDSON STREET . NEW YORK 13, N. Y.

Foundation which has pledged five million dollars on a dollar-for-dollar matching plan toward the construction of the new hospital.

Mechanical Brain 'Use Growing in Medical Sciences

Electronic computers have been used in industry and in warfare, but now they are moving into the biological and medical sciences.

Some of the dozens of uses they have in science were described in an article in the Journal of the American Medical Association.

Harry Weinrauch, M.D., and Albert W. Hetherington, Ph.D., of the U.S. Air Force's Air Research and Development Command said the mechanical brains have an almost limitless horizon for use in the medical and biological sciences.

In fact, it has even been suggested that a modified residency program for training in computer techniques be set up for qualified physicians.

The National Academy of Sciences and the National Research Council, in cooperation with the Air Force and the National Institutes of Health, have appointed a group to consider the application of computers to medicine and biology. The group will analyze the types of medical and biological problems in which computers have been employed and will recommend the types of situations in which they could profitably be used.

Computers have already been used in the lengthy statistical calculations required during mass standardizations of drugs and in the correlation of vast amounts of information in par-

Continued on page 194a





There are 1875 square feet of adsorptive surface in this spoon

SPENSIN contains attapulgite, a new therapeutic agent having 5 to 8 times the adsorptive capacity of kaolin. Because of the lattice-like structure of its extremely fine particles, a single dose of SPENSIN contains approximately 1875 square feet of adsorptive surface.

In the symptomatic treatment of diarrhea, SPENSIN1 aids in the removal of bacteria and bacterial toxins • helps restore normal absorption of fluids • protects irritated intestinal mucosa • produces stools of normal consistency.

Spensin-PS, containing two synergistic antibiotics, dihydrostreptomycin and polymyxin, for specific therapy in infectious diarrhea caused by organisms susceptible to these agents.



for the control of diarrhea

SPENSIN°

Spensin is activated attapulgite and pectin in alumina gel.

SPENSIN-PS

Spensin-PS, in addition, contains dihydrostreptomycin sulfate and polymyxin B sulfate.

DR. MONTAGUE: Replace my present prescription for obesity? You'd better have good reason.

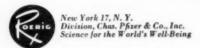
MR. CARR: I have, Doctor. Three of them, in fact.

new

AMPLUS' improved

One capsule half-hour before each meal. Bottles of 100 soft, soluble capsules, this actual size.





DR. MONTAGUE AND MR. CARR DETAIL #1

DR. MONTAGUE:	Hello, Mr.	Carr.	How's	your golf?
---------------	------------	-------	-------	------------

About the same as my bowling. MR. CABR:

The same? DR. MONTAGUE:

Same average, 131. MR. CARR:

Too bad. What's new today? DR. MONTAGUE:

Today I bring news of AMPLUS IMPROVED. MB. CARR:

You've improved AMPLUS? What's AMPLUS? DR. MONTAGUE:

Oh good. I get to start from scratch. MR. CARR:

DR. MONTAGUE: An antipruritic?

MR. CARR: No. New therapy for obesity.

Replace my present prescription for obesity? DR. MONTAGUE:

You'd better have good reason.

I have. Three of them, in fact. MR. CARR:

DR. MONTAGUE: I'm underwhelmed.

Always room for improvement, right? AMPLUS, of course, MR. CARR:

is a amphetamine, to control the somatic factor, hunger pangs . . .

Of course. Use it all the time. DR. MONTAGUE:

. . plus ATARAX, the tranquilizer that supports the psyche MR. CARR:

during the critical dieting period, and . .

DR. MONTAGUE: reduces the irritability sometimes caused by d-amphetamine.

Good idea.

MR. CARR: And, since ATARAX is the antisecretory tranquilizer, it

also stops gastric craving.

You mentioned another plus. DR. MONTAGUE:

Vitamins and minerals. MR. CARR:

Vi-... yes. For a moment I thought you said minerals. DR. MONTAGUE:

MR. CARR: It was not I. It was Vernon who pointed out that "the treatment of obesity by diet leaves the medical attendant

with an obligation to maintain mineral balance as well as

to avoid avitaminosis."

Right. But you usually have some classic summary, Mr. Carr. DR. MONTAGUE:

I do indeed. Just worked it out in the waiting room. MR. CABR:

AMPLUS IMPROVED can be summarized as: 1 for the psyche . . . 2 for the soma

3 to get slim . . . 4 the summa'.

DR. MONTAGUE: As always, I question your humor. But I like your product.

What is it again?

Amplus Improved. MB. CABB:

> representing J. B. Roerig and Company Mr. Carr

ticular areas of public health. They were used in the evaluation of the effectiveness of the Salk vaccine, and in the studies linking tobacco to cancer and tobacco to cardiovascular disease.

A computer has already been devised which analyzes electroencephalograms (the wave patterns which represent the electrical potentials of the brain) and others could be used in the analysis of similar bioelectrical phenomena, such as the electrocardiogram (the pattern of the heart's electrical activity).

Computers can be built that simulate certain systems of the body. They can be used to study the activities and the possibilities of interrelations within these systems. These, according to the authors, offer great possibilities as research tools in understanding the functioning of the body, particularly the nervous system.

Specialized computers can be designed for specific tasks. For instance, one computer has been built which is incorporated in mechanical breathing devices. The calculator measures the voluntary breathing activity of the patient

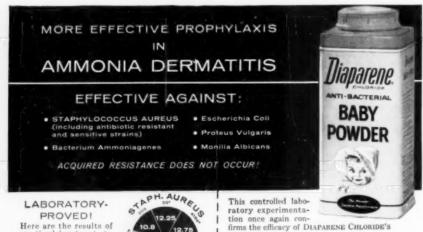
and correspondingly cuts down the action of the mechanical device.

Another category of computer application stems from its ability to store and recall quickly vast quantities of information. The authors suggested that computers be used to store the tremendous amount of data recorded on hospital charts and in medical journals. The "sheer mass of this material is so staggering that it defies efforts at retrieval." At present, the problem of building a machine big enough to store such material has not been solved, but it will be in the future, the authors think.

School of Allied Medical Professions

The School of Allied Medical Professions of Pennsylvania dedicated its new quarters recently. The building is a completely renovated former convent, and now makes it possible for various programs of the School to be housed under one roof.

Continued on page 196a



Here are the results of exacting laboratory tests, conducted at our research institute. This chart illustrates the average zone of inhibition* produced by DIAPANENE CHLORIDE BARY POWDER AGAINST BABY POWDER against staphylococci and other organisms.



antibacterial activity

This evidence provides scientific substantiation enabling physicians to prescribe DIAPARENE ANTI-BACTERIAL BABY POWDER with confidence that it provides effective prophylaxis in ammonia dermatitis in infants and incontinent adults.

Homemakers Products Division, George A. Breon & Co., New York 18, N. Y.



during pregnancy or lactation make sure of dietary adequacy with new low cost...

Mol-Iron Prenatal

ONLY 1 tablet daily, 1/2 the usual cost, phosphorus-free, 12 vitamins plus 10 minerals

The clinical superiority of MOL-IRON for the correction of iron deficiency during pregnancy has been established by more published reports than are available for any other iron preparation.

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY

to **NORMALIZE** bowel function

L. A. Formula



It has been shown1 that the colon resumes a more normal peristaltic pattern2 when it is supplied with a stool of medium soft consistency of sufficient bulk,3 especially if the indigestible portion of that bulk consists primarily of hemicellulose. To provide smooth bulk—L. A. Formula effective,⁵ palatable, economical.

- Dolkart, Dentler & Barrow, Ill. Med.J., 90:286, 1946
 Adler, Atkinson & Ivy, Am.J. Digest.Dis. 8:197, 1941
 Wozasek & Steigman, Am.J. Digest.Dis. 9:423, 1942
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- 4. Williams & Olmstead, Ann.Int. Med. 10:717, 1936 5. Cass & Wolf, Gastroenterology, 20:149, 1952.

*Abbreviation for the Latin "Levis Amplitudo", meaning smooth bulk.

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Grady Memorial Hospital

The Grady Memorial Hospital in Atlanta, Georgia, was built and equipped at a cost of approximately 26 million dollars. The 21story facility is the principal teaching hospital for the Emory University School of Medicine.

Award to University of North Carolina

The University of North Carolina School of Medicine has been awarded \$10,000 in a grant from the Hemo-Cardiac Foundation, Inc. These funds are to be used to help carry on basic blood studies now being conducted at the University under the direction of Dr. Kenneth M. Brinkhouse, Professor and Chairman of the Department of Pathology. They are for the unrestricted use of the Doctor in such manner as in his judgment will be most helpful in the furtherance of the blood research in which he and his associates are engaged.

Low-temperature Technique Reported as **New Safeguard for Surgical Patients**

A dramatic low-temperature technique that puts surgical patients virtually in a state of suspended animation was reported by Duke University surgeons. The technique calls for dropping the patient's body temperature to 50 degrees or more below normal. At such temperatures the heart stops beating and the body requires almost no oxygen. As startling as this may sound, certain operations are simplified. and the patient's margin of safety is increased.

The use of extremely low temperatures in connection with surgery of the heart represents a continuation of work that has been carried on at the Duke University Medical Center for the past three years. Application of the technique to humans was preceded by more than 350 animal experiments to prove its value as a safeguard for surgery patients. Hypothermia is used principally in operations that require opening the heart to repair defects. The patient's temperature is lowered by a special blood heatexchanger used in connection with an artificial heart-lung machine.

Ordinarily, the patient's heart is temporarily stopped by injecting a chemical solution, thus permitting surgeons to open the heart and correct defects. At extremely low body temperatures, however, the heart stops beating of its own accord. The heart-lung machine can then be turned off in order to facilitate complex surgery, leaving the patient almost in a state of suspended animation. A patient's blood circulation has been stopped for 12 minutes at Duke, but animal research indicates that this could be safely extended for as long as an hour. When the patient's temperature is raised, the heart spontaneously resumes beating. The Duke surgeon explained that the use of such low temperatures has two major advantages for the patient. First, stopping the blood flow gives the surgeon a "dry" heart to work on when the repairs are unusually complicated. When the heart-lung machine is running, blood constantly seeps into the heart and can obstruct the surgeon's vision. Second, since the body requires so little oxygen at low temperatures, the heart-lung machine can be used at very slow rates during the long periods of time needed for complicated repairs. A slow rate of blood flow lessens the traumatic effect on the blood caused by its passage through the machine.

The blood heat-exchanger can lower a patient's body temperature at the rate of two degrees Fahrenheit per minute. Previous methods which utilized ice packs or refrigerated blankets took an hour or longer and were difficult to control. The usual range of hypothemia at Duke in the past has been from 82 to 86 degrees Fahrenheit. Recently, however, body temperatures have been lowered to 41 degrees, to 48.5 degrees, and three others to approximately 68 degrees.

Blindness to be Studied at Northwestern University

A three-year grant totaling \$156,000 has been awarded to a Northwestern University Medical School faculty member to study vari-

Continued on following page



NEW LANESTA GEL for more reliable family planning

Spermicidal time, 45 minutes by Gamble diffusion test1...and 32 minutes by hemocytometer test2 - several times faster than leading contraceptive products currently available.

Protective Index — over 99.5%: In controlled studies with more than 400 women of proven fertility, only one unplanned pregnancy was reported.³⁻⁶

Unusually well tolerated?: Lanesta Gel. was found nonirritating to sensitive genital tissues even in the presence of acute vaginitis.

Supplied: Lanesta Exquiset (Physician's Prescription Package), 3 oz. tubes with applicator, 3 oz. refills. Available at all pharmacies.

References: 1. Gamble, C. J.: "Diffusion Spermicidal Times of Commercial Contraceptive Jellies and Creams Secured in 1935."
Am Pract. & Digest Treat. (Nov. i 1958. & Berberlan, D. A., and Stigittee.
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Am Pract. & Digest Treat. (Nov. i 1958. & Berberlan, D. A., and Stigittee.
Am Pract. & Digest Treat. (Nov. i 1958. & Berberlan, D. A., and Stigittee.
Clay Study: "Interin for the Evaluation Spermicidal Activity, J.A.M.A. (Linical Notes 183/2277 (Ise. 27) 1958. 3. New York City Study: "Interin Report on Clinical Investigation of Lanesta Gel. "Personal Communication, To be published on completion. 6. West Coast Study II. "Interin Report on Clinical Investigation of Lanesta Gel." Personal Communication, To be published on completion. 6. West Coast Study II. "Interin Report on Clinical Investigation of Lanesta Gel." Personal Communication, To be published on completion. 6. West Coast Study II. "Interin Report on Clinical Investigation of Lanesta Gel." Personal Communication, To be published on completion. 9. "Dennitive Studies of New Spermicides." Research Section. Eata Medical Laboratories. Chicago, Himosis, June 1957. 6. Peri, Citacian "Vaginal Tolerance of Lanesta Gel in Common Leukorrheas," Personal Communication.

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· NARCOTIC OPDER REQUIRED

ous effects of blindness in children. The grant has been received from the Institute of Neurological Diseases and Blindness of the U.S. Public Health Service. Jerome Cohen, Associate Professor in the Psychology Division of the Department of Neurology and Psychiatry, will be principal investigator of the project. The studies will involve the medical, psychological, and social consequences of severe visual deprivation on the patterns of child growth and development.

Hawiian Hospital

The Kauikeolani Children's Hospital of Honolulu celebrated the fiftieth anniversary of its founding recently with scientific and social programs. Dr. Tague C. Chisholm of the University of Minnesota Medical School and Dr. J. Roswell Gallagher of the Adolescent Clinic of the Children's Hospital of Boston participated.

Kenny Hospital in New Quarters

The Elizabeth Kenny Foundation has moved its in-patient facilities to the recently completed \$3,500,000 Rehabilitation Institute of Metropolitan Detroit. The move climaxes an expanding rehabilitation program which the Kenny Foundation has supported for several years. In addition to poliomyelitis, a growing emphasis has been placed on helping victims of other crippling diseases.

Pennsylvania University to Have New Research Facilities

In connection with the University of Pennsylvania School of Medicine, construction of a new research building is underway. The \$3,-100,000 structure will be devoted solely to medical science research. An additional building is planned for the Department of Biology, and is to be located adjacent to the Medical

Continued on page 200a

"Deformity in rheumatoid arthritis develops in two stages. The most obvious is joint destruction.

But even earlier...

muscle spasm...has insidiously started to lead to deformity."

in rheumatoid arthritis...

PARAFON* with PREDNISOLONE

provides spasmolytic, anti-inflammatory, and analgesic action

dosage: One to two tablets three or four times a day. supplied: Tablets, scored, buff colored, bottles of 36. Each tablet contains Paraflex® Chlorzoxazone® 125 mg.; Tylenol® Acetaminophen 300 mg.; and Prednisolone 1.0 mg.

precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing Parafon with Prednisolone.

L. Swanson, J. N.: Canad, M. A. J. 79:638 (Oct. 15) 1958.

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Research Building. The various buildings of the Center will be interconnected. When completed, the Research Building will be occupied by the Department of Microbiology, the Department of Physiology, the Phipps Institute section of the Department of Public Health and Preventive Medicine, the Harrison Department of Surgical Research, and the Johnson Foundation for Biophysical Research. The financing is being handled by the University and by the U.S. Public Health Service under the Federal Research Facilities Act. The University's contribution of \$1,600,000 will be matched by a U.S. Public Health Service grant of \$1,500,000.

Bronx Hospital Expands

A \$350,000 project involving the installation of a postoperative recovery unit; expansion of the operating theater, and the X-ray Department has been completed by the Bronx Hospital, Dr. Aaron A. Karan, Hospital Director, has announced. The three facilities are housed on the eighth floor of the main building. A grant of \$172,000 from the Ford Foundation paid for half of the cost of the project. The remainder was met by the Federation of Jewish Philanthropies and the hospital's own building fund resources.

Awards in Arthritis and Heart Disease

The Gairdner Foundation has announced its first international awards in arthritis and heart disease, totaling \$40,000. The award of merit has gone to Dr. Alfred Blalock and Dr. Helen Taussig, of Johns Hopkins University, for their initial development of the "blue baby" operation. Three Gairdner Foundation annual awards of \$5,000 each have been given to Dr. Harry M. Rose and Dr. Charles Ragan, of

Continued on page 202a



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MERCK SHARP & DOHME Division of Merck & Co., Inc., Philadelphia 1, Pa. New York City, for their discovery of the first practical laboratory test for the diagnosis of rheumatoid arthritis; to Professor W. D. M. Paton and Dr. Eleanor Zaimis, of London, for their discovery of the first drugs to be proven practical and effective in the treatment of hypertension, and to Dr. W. G. Bigelow, of Toronto, for his development of the technique of hypothermia for use in heart surgery.

Tropical Disease Studies

Twelve graduate students from the University of Miami will study tropical diseases and parasitology in Central America and the Caribbean as a result of an educational grant of \$19,000 received by the University from U. S. National Institutes of Health. Six students will go to Costa Rica for a month's study, while

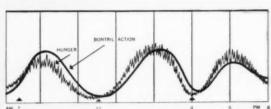
the second group, who are residents specializing in internal medicine, will go to Jamaica. In Costa Rica, the San Juan de Dios Hospital of San Jose will be headquarters for the group, while the Jamaica program will stem from the British Medical College of the West Indies.

National Library of Medicine

Preliminary plans for the new building of the National Library of Medicine have been submitted to the Public Buildings Service. The new building will be constructed on the grounds of the National Institute of Health in Bethesda, Maryland. The 85th Congress appropriated seven million dollars for construction, which will begin this year, and the building is expected to be completed in 1961, the 125th

Continued on page 204a





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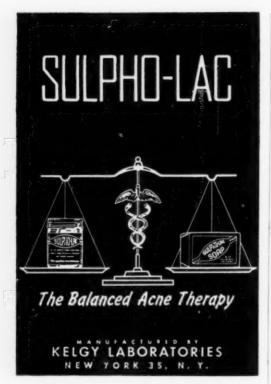
sponse ..."1

sules are equally effective but indi- provement...."3 Osteoarthritis: 301 vidually adaptable in a wide range of cases showed "...a total of 44.5 per cent with complete remission or ma-Recent clinical reports continue to jor improvement. Of the remainder, justify the selection of Butazolidin 28.2 per cent showed minor improvefor rapid relief of pain, increased ment..." Spondylitis: All patients mobility, and early resolution of "...experienced initial major improvement that was maintained throughout Gouty Arthritis: "...95 per cent of pa- the period of medication." Painful tients experienced a satisfactory re- Shoulder Syndrome: Response of 70 patients with various forms showed Rheumatoid Arthritis: In "A total of "...8.6 per cent complete remissions, 215 cases...over half, 50.7 per cent 47.1 per cent major improvement, 20.0 showed at least major improvement, per cent minor improvement...."

M. A. J. 79:634 (Oct. 15) 1958. 2. Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. 8:1758, 1957. 3. Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. 256:388, 1957.

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anniversary of the library's founding. The National Library of Medicine, operated by the Public Health Service of the Department of Public Health, Education, and Welfare, is reportedly the largest medical library in the world.

Center for Study of Heart Disease

A center for the all-purpose treatment and study of heart diseases has been opened at New York Medical College, Flower and Fifth Avenue Hospitals. Known as the "cardiopulmonary program" it coordinates all services available to the heart patient in every department, with surgical, medical, and psychiatric teams working as one unit.

Research in Tropical Medicine

A survey to determine the adequacy of research and training in tropical medicine in the United States will be undertaken by the National Research Council, with financial support from the National Institutes of Health, the Department of Defense, and the Rockefeller Foundation. The latter is contributing \$26,000 over a three-year period. The survey will seek information on the status of tropical diseases which affect human beings and animals and are of economic importance, and will evaluate the research and development work now in progress.

Dr. Abraham M. Rabiner

Dr. Abraham M. Rabiner has been named professor emeritus of neurology at the State University of New York Downstate Medical Center in Brooklyn. A member of the Center's faculty since 1937 when it was the Long Island College of Medicine, Dr. Rabiner retired as professor and head of the division of neurology in 1958. He also retired as director of neurology at the Kings County Hospital.

Continued on page 206a

YESTERDAY, A COUGH SPOILED HIS DRAWING TODAY HIS COUGH IS UNDER CONTROL

WITH

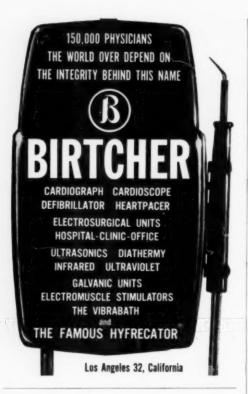
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Research Training Grant in Microbiology

The National Institute for Allergy and Infectious Diseases of the US Public Health Service has awarded \$225,690 for research training in microbiology and virology to St. Louis University School of Medicine for a five-year period. The new program will offer scientists who have Ph.D. degrees in other sciences an opportunity to broaden their training and experience along lines pursued in the Microbiology Department. Opportunity will be offered also to provide research training in infectious diseases to young physicians who plan to make microbiology and related basic sciences their career.

Mount Sinai Hospital Grant

The Department of Pathology of Mount Sinai Hospital, New York, has been awarded \$171,-000 by the U.S. Public Health Service as a research training grant for experimental pathology for five years. Under the program, training of residents and research fellows in experimental pathology will be integrated with that of anatomical and clinical pathology. The grant also permits the appointment of a coordinator for the organization of the training in various techniques of experimental pathology.

Rehabilitation Center in Burlington

The Vermont Rehabilitation Center is under construction in Burlington using \$325,000 voted by the Vermont State Legislature, and \$200,000 of Federal (Hill-Burton) matching funds. The function of the center is to furnish a focal point for a statewide attack on chronic illness and disability. It brings a full rehabilitation team to the immediate vicinity of the Vermont College of Medicine. It is also connected with one of that College's two teaching hospitals, De Goesbriand Memorial Hospital, which will be used for teaching and for providing specialist treatment for the patient. Features of the center will include the development

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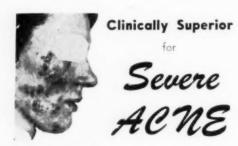
reduces the severity of the attack, yet allows full active immunity.

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confers effective passive immunity for three to four weeks.

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antibody equivalent of more than 40 cc.
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Available: 2 cc. and 10 cc. vials.





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of a speech and hearing unit with a program which will integrate with the programs of the state agencies, and with a curriculum for speech and hearing therapists. A cardiac or classification unit is functioning at the present time under subsidy from the Vermont Heart Association in combination with the cardiopulmonary unit of the De Goesbrand Memorial Hospital.

New Research Building Planned

Construction of a \$2,500,000 Research Building which will be owned jointly by University Hospitals and Western Reserve University School of Medicine is tentatively set for this year. This will be the first major expansion of research facilities in more than thirty years. The building was made possible through grants from the U.S. Public Health Service of \$1,253,686 which was equaled by private gifts. Republic Steel contributed \$40,000 and the Hanna Fund pledged the balance. A second grant of \$376,245 is to be used for remodeling the School of Medicine.

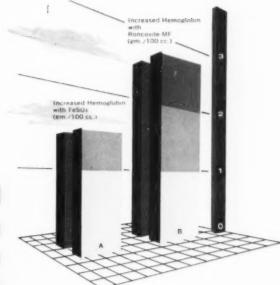
Misericordia General Hospital

The new nine-million-dollar Misericordia General Hospital, Bronx, New York, was dedicated recently. The new plant will serve the Bronx and lower Westchester County. It replaces the old Misericordia Hospial which was founded by the Sisters of Misericorde seventy years ago. The hospital includes a sevenstory general hospital building of 210 beds, a six-story nursing school and residence for 150 nurses, and a three-story shelter for unmarried mothers. Administrative offices, intern quarters, admitting office, and medical records library occupy the first floor. Outpatient departments, laboratories, and X-ray and emergency departments are located on the second floor of the main building, while the third floor contains an air-conditioned surgical suite with 74 beds

Continued on page 210a

LEGEND:

- (A) Patients receiving ferrous sulfate 200 mg, q.i.d. showed average increase in hemoglobin of 1.5 gm.
- (B) Patients receiving Roncovite-MF (15 mg. cobalt chloride and 100 mg. ferrous sulfate) showed average



Improved iron utilization in anemia

RONCOVITE-mf

Improves iron utilization by enhancing the formation

of erythropoietin, the erythropoietic hormone

Recent research^{1,2} again emphasizes the role of cobalt as the only clinically proved agent which enhances erythropoietin formation.

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Acting through this physiologic mechanism, Roncovite (cobaltiron) therapy results in an increased production of red cells and hemoglobin—a better blood picture—a faster, more complete response than iron alone in the common hypochromic anemias—menstrual anemia—anemia of pregnancy—nutritional anemia of infancy—and in anemia due to chronic infection or inflammation. 3,4.5,6,7,8

(1) Goldwasser, E.: Jacobson, L. O.; Fried, W., and Pizak, L. F.: Blood I3:55 (Jan.) 1958. (2) Gurney, C. W.; Jacobson, L. O., and Goldwasser, E.: Ann. Int. Med. 49:363 (Aug.) 1958. (3) Korst, D. R.; Bishop, R. C., and Bethell, F. H.: J. Lab. & Clin. Med. 52:364 (Sept.) 1958. (4) Ausman, D. C.: Journal-Lancet 76:290 (Oct.) 1956. (5) Holly, R. G.: Obst. & Gynec. 9:299 (Mar.) 1957. (6) Holly, R. G.; Clin. Obst. & Gynec. 1:15 (Mar.) 1958. (7) Diamond, E. F.; Gonzales, F., and Pisani, A.: Illinois M. J. II3:154 (April) 1958. (8) Hill, J. M.; La Jous, J., and Sebastian, F. J.: Texas J. Med. 51:686 (Oct.) 1955.

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Coming next month . . .

- Arrhythmias in Children
 By Saul J. Robinson, M.D., Dept. of Pediatrics, Stanford University School of Medicine.
- How To Be Misunderstood
 By H. A. Davidson, M.D., Editor of the Journal of the Medical Society of New Jersey and author of the standard Guide to Medical Writing.
- Anemias in General Practice
 By Leon N. Sussman, M.D., Attending Physician in Hematology, Beth Israel Hospital, New York, N. Y.
- Pollinosis Without Hay Fever
 By Mayer A. Green, M.D., F.A.C.A, Allergist, Dept. of Dermatology, University of Pitsburgh School of Medicine; Senior Physician, Division of Allergy, Monteflore Hospital, Pittsburgh; and Head of Dept. of Allergy at Columbia Hospital, Pittsburgh.
- Fatigue

 By E. T. Arnold, Jr., M.D., Hogansville, Ga.
- Infantile Gastrointestinal Disorders— Clinical Impressions of Meclizine Pyridoxine Therapy
 By H. T. Dougan, M.D., Dept. of Pediatrics, Medical College of Virginia.
- The General Practitioner, A Neglected Resource for the Psychiatric Ward By Julius Sobin, M.D., Chief of Psychiatry, Veterans Administration Hospital, East Orange, N. J.
- Allergy of the Eye and Its Treatment
 By L. W. Prewitt, M.D., Ottumwa, Iowa.
- Early Medieval Medicine in the Western Empire
 By B. L. Gordon, M.D., Ventnor, N. J.

and equipment for all specialized types of surgery. The Department of Surgery will have a teaching affiliation with the Bronx Municipal Hospital and the Albert Einstein College of Medicine:

Grant to Hospital Research and Educational Trust

A grant of \$52,000 for a study of how electronic data processing equipment may best be adapted for hospital use has been made by the John A. Hartford Foundation to the Hospital Research and Educational Trust, a non-profit organization, with grants from foundations and other sources, which permits it to conduct projects for general improvement of knowledge and practice in the hospital field.

New Veterans Administration Hospital in Kansas

The Veterans Administration has dedicated a new 1,011-bed hospital for neuropsychiatric patients at Topeka, Kansas. This, the sixtieth Veterans Administration hospital to have been built since World War II, replaces the temporary structure built for the Army in 1943, and later turned over to the Veterans Administration. The new hospital is three miles from the center of Topeka, on a site of about 150 acres. The hospital proper comprises about twenty buildings of reinforced concrete with brick facing. The cost of construction approximated twenty million dollars. It will be staffed by approximately 1,150 employees.

Children's Hospital of the District of Columbia

Grants totaling \$457,357 and a pledge of \$200,000 from the Variety Club of Washington are part of the funds to go into the construction of the Research Center of the Children's Hospital of Washington, D. C. The three-story structure will provide facilities for

research in allergy, antibiotics, adolescent medicine, cystic fibrosis, hematology, psychiatry, renal diseases, and viral diseases. Movable partitions will facilitate rearrangement of research areas.

Irvington House Institute for Rheumatic Fever and Allied Diseases

New York University and Irvington House have agreed to establish the Irvington House Institute for Rheumatic Fever and Allied Diseases as a part of the New York University-Bellevue Medical Center. The Institute will be housed in the new University Hospital. Irvington House will underwrite the amount of \$500,000 toward the construction of the treatment, research, and clinical facilities. Both Irvington House and the Medical Center have been responsible for original research on rheumatic fever. Irvington House, at Irvington-on-Hudson (New York), is a hospital and research center for children afflicted with dis-

eases of the heart. Since its beginning in 1920, it has cared for over 5,800 children. The University and Irvington House, while joining in the creation and operation of the Institute, will continue to function as autonomous, financially independent institutions. New York University-Bellevue Medical Center will appoint the central committee of the Institute to function as a communications center for research programs in rheumatic fever and those allied diseases which are initiated by streptococcal infection.

Diabetic Blindness Related to Type, Length of Illness

Blindness as a complication of long-term diabetes may be prevented by early detection and adequate control of the disease, a new study has suggested.

The study, conducted at Joslin Clinic, Boston diabetes detection center, lends support to the "growing conviction" that complications of

Continued on following page



long-term diabetes are related to the degree of control maintained over the years.

Writing in the Journal of the American Medical Association, Drs. Howard F. Root, Stanley Mirsky and Jorn Ditzel said the prevalence of blindness due to diabetes has been rising as more persons survive diabetes for long periods.

Diabetes is a disease in which the body's utilization of sugar is impaired. The usual treatment involves diet control and injections of insulin, a substance necessary for the breakdown of sugar in the body.

Diabetes appears to seriously disturb the body's whole metabolism (the physical and chemical changes in the body). This disturbance apparently plays a role in the development of a degenerative eye condition known as proliferative retinopathy in which there are

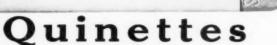
changes in the retina and blood vessels. It may lead to blindness.

The doctors studied the records of 847 persons who developed proliferative retinopathy during the last 30 years. They found that none of the patients had good control of diabetes through diet or insulin therapy from the onset of the disease. All had severe diabetes of long duration, usually beginning at a relatively early

However, many other patients are known to have survived diabetes with onset in childhood for periods of 20 to 30 years without any evidence of retinopathy when their diabetic treatment had been adequate.

The authors feel that proliferative retinopathy can be prevented and postponed by early diagnosis and continuous control. They said physicians are "obligated to plan treatment and

day treatment for tenacious trichomonas



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supervise management in such a way as to provide the best control attainable at the present time. . . ."

The study showed: That the 847 patients had diabetes for an average of 17 years before developing proliferative retinopathy.

That nearly half of them had diabetes before they were 20 years old and the rest before the age of 40. Most of them had difficulty in controlling the disease.

That among the last 206 consecutive cases there was no case of blindness in a patient under 20 years of age, but that 25 percent of those over 20 were blind.

In summary the doctors said that three factors appeared to influence the development of retinopathy in diabetics. They are long duration of the ailment; the inability to maintain adequate control over the disease, and most importantly, the early age of onset. Generally when diabetes begins early, it is severe, whereas diabetes developing late in life is generally mild. Thus early diagnosis and continuous control of diabetes is of "maximum importance

in postponing and preventing" proliferative retinopathy.

Rehabilitation of Alcoholics

A rehabilitation program, designed to assist alcoholics to a more useful way of life, will be undertaken shortly by the City of Philadelphia and Temple University Medical Center. The program, for which the City will pay Temple \$36,000 a year, will be a collaborative effort by the Institution's medical staff and a group of psychiatrists and psychologists from the University. It will be carried on both inside the institution and after the inmate's release. The program calls for screening, counseling, treatment and release planning-finding the inmate a job, a place to live, and introducing him to an agency such as Alcoholics Anonymous. The follow-up procedure after release will carry on the treatment on an outpatient basis through clinics and health centers. Only those inmates who are willing and who show a possibility of rehabilitation will be enrolled in the program.

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DIAGNOSIS, PLEASE

(Answer from page 33a)

CRANIOPHARYNGIOMA

Note the mass above the sella with irregular calcifications. The lower margin of the mass extends down and deforms the sella additionally.

WHO IS THIS DOCTOR?

(Answer from page 69a)

POPE JOHN XXI

MEDIOUIZ

(Answers from page 77a)

1 (C), 2 (E), 3 (C), 4 (A), 5 (C), 6 (B), 7 (C), 8 (C), 9 (E), 10 (A), 11 (E), 12 (E), 13 (B).

WHAT'S YOUR VERDICT?

(Answer from page 53a)

The Supreme Court affirmed the judgments of the trial court, holding:

"The point at which the surgeon assumes supervision and control in the operating room determines his responsibility, not the time when he begins to operate on the patient. The jury was justified in finding under the evidence that the surgeon had assumed command and responsibility by giving direct orders concerning the placing of the patient in position on the operating table, and that it was negligence to order the attendant to do anything which might take him away from the patient without first assuring that someone was at hand to attend and hold the patient."

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...in bar form. For therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne.

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Covering the Times

When the S/S *United States* puts out to sea on a typical crossing of the Atlantic, the health of some 3000 persons (2000 passengers, 1000 crew) becomes the responsibility of Dr. John S. Sheedy, subject of this month's cover painting by Stevan Dohanos.

Aboard the 53,300-ton flagship of America's merchant fleet Dr. Sheedy is Chief Surgeon, a post he regards with great pride and devotes virtually all of his time to. It is only occasionally that he visits Worcester, Mass., where his home on land is located. The way the doctor sees it, the big ship is his home.

The *United States'* excellent medical facilities include a hospital and fully equipped operating room. Dr. Sheedy's staff is made up of an assistant surgeon, four nurses and a number of hospital attendants.

He has headed the ship's medical section since her maiden voyage seven years ago, handling a practice similar to that of the general practitioner. But with one difference. The number one illness Dr. Sheedy encounters is gastrointestinal upset.

"Passengers try to eat the whole menu," he explains. "This is bound to cause a problem. I usually treat them in their stateroom, and give them ample reassurance as well as medication."

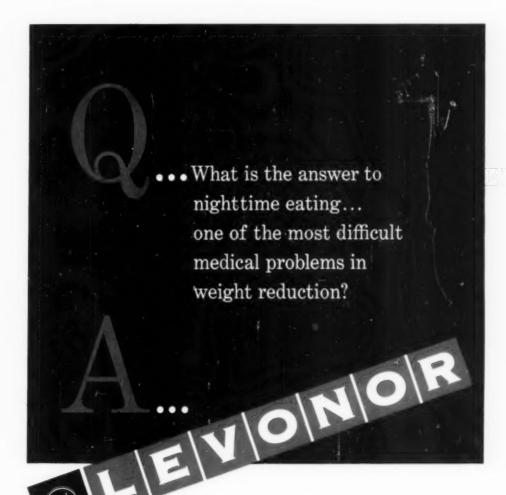
Among Chief Surgeon Sheedy's patients are always a liberal sprinkling of well-known figures—business leaders, actors, senators, cabinet members, diplomats—which makes his practice unusual. Many of his former patients continue to send him Christmas cards through the years, a gesture he finds very gratifying.

Each trip, according to Dr. Sheedy, there are from twenty to thirty physicians among the passengers, which gives him a welcome opportunity to talk shop. This can be taken as an open invitation to readers of MEDICAL TIMES: If any of you book passage on the *United States*, be sure to look up Chief Surgeon Sheedy. He'll be glad to show you around his sea-going office.

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Stevan Dohanos (left) jots down model's blood pressure as actually taken by Dr. Sheedy during posing session abroad the S/S United States.





because it can be taken at 8:00 P.M. or later without interfering with sleep.

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